SECTION 2

Alternatives Considered

2.1 Introduction

This section describes how the Lead Agencies evaluated alternatives to meet the project purpose identified in Section 1, Purpose of and Need for the Project. The project purpose is to identify the most appropriate improvements for addressing existing east-west transportation demand and the demand generated by the planned development in the southern portion of the Green Bay metropolitan area. In each step of the evaluation, alternatives were assessed to determine whether they met the project purpose and the following needs:

- Address congestion in the vicinity of the existing Fox River bridges.
- Accommodate existing and planned land use and future travel demand generated by planned development.
- Reduce travel time by improving east-west connectivity.
- Address higher-than-average crash rates and safety issues in the vicinity of the existing Fox River bridges.

This section provides an overview of the alternatives development process. Section 2.2 describes the detailed process Brown County conducted from 2006 through 2020 to identify, screen, and evaluate alternatives. Brown County initially identified and evaluated construction alternatives involving improvements to existing roads and new road construction, and non-construction alternatives. New road alternatives are described as general routes.

As additional information on the routes was developed, the alternative routes were refined; those retained for detailed analysis in the EIS are described as 500-foot corridors containing a specific working alignment. Section 2.3 describes the Corridor Alternatives retained for detailed study in this Tier 1 EIS, and further explains the use of working alignments.

In 2008, the Lead Agencies issued a Notice of Intent to prepare an EIS and began engineering and environmental studies as part of the NEPA process to explore how to address the need for improved east-west travel in the southern Green Bay metropolitan area and meet eligibility requirements for state and federal funding. A long-standing locally developed concept for addressing the project needs was the construction of a new Fox River crossing between the Wrightstown Bridge and the Claude Allouez Bridge. Even though previous Brown County planning documents had identified a general location of the potential new river crossing, Brown County began a robust NEPA study process with the public, local governments, tribes, and state and federal resource agencies to (1) obtain input on the need for the project, the range of alternatives to be studied, and the preferred alternative, (2) assess whether other measures could be put in place to avoid the need to build a new river crossing, (3) develop and analyze several alternatives to find the best location for a new river crossing if it was needed, and (4) analyze the relative costs and impacts of the proposed transportation solutions.

Initially, 11 alternative routes for a new river crossing were developed and evaluated, all of which featured a new bridge across the Fox River, south of the existing Claude Allouez Bridge in De Pere. Recognizing that the new east-west roadway’s utility would be enhanced if it provided access to Interstate 41 (I-41; at the time, US 41), most of the alternatives involved either a new interchange with I-41 or connected to an existing interchange with I-41 at County F (Scheuring Road), County S, or even as far south as County U. Three other alternatives—Improve Existing Roads, Transportation Demand Management (TDM), and Transportation System Management (TSM)—were also identified and evaluated.
Brown County initially evaluated the alternatives to identify those that best met the project needs with the fewest environmental impacts, and sought public, local government, tribal, and resource agency input on which should be dropped from consideration and which should be retained for detailed study. Section 2.2 describes the outcome of this process.

Access to I-41 is, and has been, a key issue. In 2012, Brown County, at the request of WisDOT and FHWA, paused the alternatives screening process to study whether a new interchange with I-41 could be built without detrimental effects on freeway traffic operations (see Sections 2.2.2 and 2.3.3). FHWA must approve new or revised access points to the Interstate system as part of its goal to assure that the Interstate system provides the highest level of service in terms of safety and mobility. Any request for new Interstate access must satisfy several requirements, which can be found on FHWA’s website.1

As described in Section 1.1, federal requirements limit NEPA approval for a project-level EIS when full funding is not available. Therefore, the Lead Agencies are proceeding with a Tier 1 EIS and evaluating a range of alternative corridors, rather than specific road alignments. The corridors cover a wider area in which the roadway (alignment) could lie and provide flexibility in positioning a roadway and evaluating potential impacts prior to conducting detailed engineering. As funding becomes available to construct sections of the project, a more detailed analysis will be conducted for specific improvements. Section 2.3.1 provides more information on the concept of the 500-foot corridor and working roadway alignment within the corridor used to evaluate the alternatives. This corridor serves as the area evaluated in this Tier 1 EIS. This Tier 1 analysis relies on existing published data rather than field studies to evaluate and make an informed decision among Corridor Alternatives. Using published data to assess resources is sufficient to provide meaningful environmental information and differentiate among the 500-foot-wide Corridor Alternatives. Relying on published data means that more detailed information like the quality of environmental resources, be it wetlands or habitat, is not always known, and that the extent of environmental resources in published data may not always match actual conditions in the field due to the passage of time or limitations in mapping accuracy. Since the working alignments are only representative and may differ from the eventual build alignment developed in Tier 2 studies, performing more detailed assessments of resources would not necessarily lead to more certainty about impacts occurring or not occurring. However, Tier 2 project-level studies would involve detailed engineering, design, and field reviews to establish the extent and characteristics of environmental resources, and would incorporate and reference the decisions and analyses conducted as part of this Tier 1 review.

Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1508.28) note that tiering is appropriate when analyzing a specific action at an early stage and define tiering as “the coverage of general matters in broader environmental impact statements...”. This is consistent with use of a corridor rather than a specific alignment. CEQ regulations also require agencies to objectively evaluate all reasonable alternatives, including no action, and explain why alternatives were dismissed from further evaluation (40 CFR 1502.14(a)).

Similarly, FHWA’s regulations for implementing NEPA (23 CFR 771.111 (g)) state that, “The first tier EIS would focus on broad issues such as general location, mode choice, and areawide air quality and land use implications of the major alternatives. The second tier would address site-specific details on project impacts, costs, and mitigation measures.” Accordingly, this Tier 1 EIS only evaluates the relative merits of corridors and not specific alignments. The EIS will be prepared consistent with FHWA environmental requirements including, but not limited to, 23 United States Code (USC) 139, 23 CFR 771, and 40 CFR parts 1500–1508. As more detailed project alignments and engineering are developed in the future, subsequent Tier 2 environmental documents will be prepared for consideration and potential project approval prior to potential construction.

2.2 Identify, Screen, and Evaluate Alternatives

This section describes how the Lead Agencies identified a range of alternatives during project planning and details how alternatives were evaluated, modified in some cases, refined, and eliminated or retained for detailed study. The three phases of the alternative identification, screening, and evaluation process are:

- **Step 1—Develop and Screen Alternatives.** In this step, the Lead Agencies identified no build, build, and management (TDM and TSM) alternatives, and conducted a preliminary evaluation based on how well the alternatives met the project purpose and need. See Section 2.2.1.

- **Step 2—Evaluate Alternative Routes.** In this step, the Lead Agencies assessed the 11 alternative routes retained, and screened them based on how each route met the needs-based screening criteria described in Section 2.2.2 and whether major environmental impacts could result. See Section 2.2.2.

- **Step 3—Refine Alternative Routes.** In the final step, the Lead Agencies conducted additional analysis to further evaluate the remaining routes and identify corridors to be evaluated in detail in this Tier 1 EIS. See Section 2.2.3.

Each step also documents alternatives that were not selected for detailed study and the rationale for dropping them from further consideration.

### 2.2.1 Step 1: Develop and Screen Alternatives

Step 1 identified 15 alternatives (see Exhibit 2-1) within the project boundaries: the No Build Alternative, 12 build alternatives, and two transportation management alternatives. The build alternatives consist of the Improve Existing Roads Alternative and 11 alternative routes. The management alternatives are the TSM Alternative and TDM Alternative.

The Lead Agencies identified alternatives that would improve travel efficiency and access across the Fox River. The west project limit has always been west of I-41 from County F to just south of the County S interchange. The east limit was originally set along WIS 172 and I-43. Exhibit 2-2 shows the project limits and initial Route Alternatives considered. As the alternatives evaluation progressed and other road improvements occurred, the project boundaries covered a smaller area. For example, County G and MM were originally part of Routes 1, 2, and 4. After improvements were made to County GV, Routes 1, 2, and 4 were redefined to eliminate the G/MM portion, which was no longer needed. Alternative-specific termini are described in Section 2.3.3, Corridor Alternatives.

In Step 1, the Lead Agencies consulted transportation plans and studies, reviewed the county’s and each community’s comprehensive plans, and received input from the public, local officials, tribes, and agencies to identify an initial set of construction alternatives that could achieve the project’s purpose and need.

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2 The nine screening criteria were initially described as objectives when they were developed in 2007.
Exhibit 2-2. Initial Range of Alternatives Considered
The transportation plans and studies included the Green Bay Metropolitan Planning Organization (MPO) Long-Range Transportation Plan (updated 2010), Southwest De Pere Development Plan (approved 2003), and the Brown County Year 2020 Land Use and Transportation Plan (approved 1996). The community comprehensive plans included those prepared by Brown County (approved 2004), Town of Ledgeview (updated 2009), Village of Bellevue (approved 2006), Village of Allouez (updated 2009), Village of Hobart (approved 2006), City of De Pere (updated 2010), Town of Lawrence (approved 2006), Town of Rockland (approved 2005), Town of Glenmore (approved 2005), and Town of Wrightstown (approved 2005). A stakeholder committee provided input on alternative routes in February 2009 and March 2010, as did the public during 2009 public involvement meetings. The April 2009 public involvement meeting resulted in the addition of alternative routes 4, 8, 10, and 11.

As described below, this step ultimately eliminated the Improve Existing Roads Alternative. It also eliminated the TDM Alternative and the TSM Alternative as standalone alternatives, leaving 12 alternatives (including the No Build) remaining at the end of Step 1.

**No Build Alternative**

Under the No Build Alternative, Brown County and WisDOT would not construct new roads or bridges, and the existing transportation system would continue to be maintained as it has been. Maintenance and minor improvement projects would be advanced as needed with their associated impacts and costs, but safety and capacity improvements would not occur. The No Build Alternative would not have any direct impacts to adjacent properties and would not require acquisition of property for highway right of way.

The No Build Alternative would not address any of the project needs:

- Address congestion in the vicinity of the existing Fox River bridges.
- Accommodate existing and planned land use and future travel demand generated by planned development.
- Reduce travel time by improving east-west connectivity.
- Address higher-than-average crash rates and safety issues in the vicinity of the existing Fox River bridges.

As described in Section 1, the 10-mile river crossing gap between the Claude Allouez Bridge in downtown De Pere and the bridge in Wrightstown would continue to reduce the efficiency of east-west travel in the southern Green Bay metropolitan area. The No Build Alternative would not support development planned for areas between County F/County X and Rockland Road on both sides of the river and would not support future growth or provide a needed connection for residents that cross the river for work or personal business. In addition, longer trip lengths and congested conditions on existing bridges could result in an increase in crash rates and hinder the response to emergencies, as well as increase conflicts between vehicles, pedestrians, and bicyclists.

The No Build Alternative does not satisfy the project purpose and needs, but the Lead Agencies will carry it forward in this analysis to serve as a baseline for comparing the other alternatives.

**Transportation Demand Management Alternative**

TDM attempts to reduce the number of vehicles on roadways through better land use planning, improved use of technology, or shifting trips to other means of transportation. TDM measures include:

- Increasing transit ridership.
- Promoting ridesharing with park-and-ride lots.
- Improving bicycle and pedestrian mobility.
- Mixing land uses, such as combining business, commercial, residential, or institutional uses in a single building or area as a way of reducing the need to drive between them.
The Brown County Comprehensive Plan (Brown County Planning Commission 2004) and the Green Bay MPO 2045 Long-Range Transportation Plan (2015) have a strong commitment to promoting TDM measures by:

- Mixing land uses, building sidewalks and trails, and calming traffic to enable and encourage walking and bicycling trips.
- Designing arterial roadways to move traffic efficiently while minimizing barriers to pedestrians and bicyclists.
- Encouraging intercity bus routes and the establishment of high-speed rail that serves the Green Bay, Fox Valley, and Milwaukee Metropolitan areas.

The City of De Pere has implemented many of these measures, including bike lanes, sidewalks, and mixed land use. Most roadways in De Pere have sidewalks, and the City has committed to include sidewalks and bicycle accommodations as new developments occur. While there are few mass transit options in the corridor, the Green Bay Transit Route 17 Brick Line extends to County F.

All of these improvements reduce vehicle trips on the roadway. While transit and multimodal improvements can play an important role in the study area’s transportation solutions, they have not been effective in reducing vehicle use to date (Green Bay MPO 2015; Brown County Planning Commission 2004), and as a standalone alternative, they cannot completely address the following purpose and need factors described in Section 1:

**Address Congestion in the Vicinity of the Existing Fox River Bridges.** As described in Section 1.3, Project Needs, the Claude Allouez Bridge in downtown De Pere and the WIS 96 bridge in Wrightstown are more than 10 miles apart, which reduces the efficiency of east-west travel in the southern Green Bay metropolitan area. This gap in east-west linkages leads to congestion on the Claude Allouez and WIS 172 bridges. Brown County is working with the Fox Cities area MPO to develop an intercity bus line; however, its research indicates that buses will not be used heavily enough to solve the congestion problems (Runge, MPO Director, pers. comm. 2019a). In addition, Brown County continues to implement TDM measures such as sidewalks and bike accommodations, but traffic forecasts indicate that traffic will operate at level of service E in 2045 on the WIS 172 and Claude Allouez bridges.

**Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development.** Even with recommended increased TDM measures, the 2045 Long-Range Transportation Plan (Green Bay MPO 2015) and Brown County Comprehensive Plan (Brown County Planning Commission 2004) note that the metropolitan area’s roadway network could accommodate nearly all the traffic projected for...
2045, but demand would exceed the capacity of the existing transportation system in certain locations, including on and near the Claude Allouez Bridge.

**Reduce Travel Time by Improving East-West Connectivity.** TDM measures focus on reducing the number of vehicles on the road and do not directly address gaps in east-west system linkages resulting from the limited number of east-west crossings. The 10-mile distance between river crossings in downtown De Pere and Wrightstown leads to drivers needing to travel several miles out of their way to cross the river. Even with increased TDM measures, the gaps in east-west system linkages will remain, and forecasts indicate that traffic will operate at level of service E in 2045 on the WIS 172 and Claude Allouez bridges. A level of service E is below acceptable levels (level of service D\(^3\)).

**Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges.** The TDM alternative would provide some safety benefits by removing vehicles from the roadway; however, regional plans like the 2045 Long-Range Transportation Plan (Green Bay MPO 2015) indicate that TDM alone would not reduce congestion enough to eliminate the need for a new bridge. This is supported by more recent analysis described below in the subsection titled, Build Alternative: Improve Existing Roads. As congestion continues to grow with lack of an additional river crossing, crash rates could increase. In addition, motorists farther south on either side of the river would still need to travel longer distances to cross. Increased vehicle miles traveled increases exposure to crashes.

Although the TDM measures alone would be insufficient to address these transportation needs, they will continue to be implemented where appropriate and will be coordinated with planned regional TDM improvements to ensure continuity with the local and regional plans. The project team will evaluate TDM measures for inclusion in the alignment alternatives that will be developed during Tier 2 studies.

**Transportation System Management Alternative**

TSM maximizes the efficiency and use of existing roadways to delay or eliminate the need to add capacity. The following are examples of TSM measures:

- Placing roundabouts at intersections instead of traffic signals allows for continuous movement of traffic around the intersection. Since traffic is not required to stop, the intersection can handle more traffic.
- Restriping roadways to create left-turn lanes or two-way left-turn lanes moves turning traffic out of the through lanes, which prevents backups behind a turning vehicle.
- Reducing the number of access points along major roadways prevents traffic from turning onto roadways in unsafe locations.
- Intelligent Transportation System technologies, such as traffic cameras and dynamic message signs, allow detection of congestion or crashes and notification of drivers.

Brown County and local governments have made efforts to maximize the efficiency and capacity of the roadways in the area by using roundabouts and minimizing access where possible (Runge, MPO Director, pers. comm. 2019a). Roundabouts, dynamic message signs, and two-way left-turn lanes are already in use within and around the City of De Pere. Multiple roundabouts are in place on County F and County X (Heritage Road), and County F has a two-way left-turn lane for a 0.5-mile segment between Matthew Drive and Patriot Way. In addition, WisDOT and De Pere have chosen to maintain the Main Avenue/Reid Street (WIS 32) one-way pair through the west side of De Pere’s downtown to maximize traffic capacity. Although additional specific improvements have not been identified, they are expected to include TSM measures (Runge, MPO Director, email comm. 2019b).

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\(^3\) This project follows WisDOT’s Facilities Development Manual (FDM), which considers level of service D acceptable in urban areas such as the Green Bay Metropolitan area. FHWA agreed that level of service D is appropriate for this project.
The TSM Alternative would have a small footprint and relatively low construction costs. However, TSM measures alone would not address the following needs described in Section 1:

**Address Congestion in the Vicinity of the Existing Fox River Bridges.** Even with the existing roundabouts at the interchanges on I-41 and at the Claude Allouez Bridge, which make the intersections as efficient as possible, congestion is expected to worsen to level of service E with future traffic demand. The TSM Alternative would not relieve congestion on existing crossings.

**Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development.** TSM measures will continue to be implemented over the planning period (through 2045) and are expected to enhance capacity, safety, multimodal accessibility, and community livability. However, they are not expected to provide the capacity needed to handle the projected travel demand at an acceptable level of service (Runge, MPO Director, email comm. 2019a). A standalone TSM Alternative would not address the gap in system linkage between the Claude Allouez Bridge in downtown De Pere and the WIS 96 bridge in Wrightstown (more than 10 miles away) that leads to congestion on the Claude Allouez and WIS 172 bridges. Although many of the TSM measures listed above have been implemented, the 2045 Long-Range Transportation Plan (Green Bay MPO 2015) and Brown County Comprehensive Plan (Brown County Planning Commission 2004) note that an additional bridge crossing is needed to effectively handle the demand that will be generated by the development planned for the area.

**Reduce Travel Time by Improving East-West Connectivity.** TSM measures focus on maximizing the efficiency and use of existing roadways and do not directly address gaps in east-west system linkage resulting from the limited number of east-west crossings. The 10-mile distance between river crossings in downtown De Pere and Wrightstown forces drivers to travel several miles out of their way to cross the river. Even with TSM measures, the gaps in east-west system linkages will remain.

**Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges.** The standalone TSM Alternative would reduce crashes by adding safety measures and limiting access points. However, during peak periods, high traffic volumes at the east and west ends of the Claude Allouez Bridge will likely overwhelm these measures, and space limitations in downtown De Pere will make it difficult to implement additional measures. Even with additional improvements, the gaps in system linkages remain, and as congestion continues to grow, crash rates could increase. In addition, motorists farther south on either side of the river would need to travel longer distances to cross. Increased vehicle miles traveled increases exposure to crashes.

As noted in Section 1, traffic forecasts through 2045 for the Claude Allouez Bridge and the WIS 172 bridge indicate that traffic volumes will increase and result in worsening congestion if additional capacity is not added to handle future traffic volumes. Although TSM measures alone would be insufficient to address transportation needs, they will continue to be implemented where appropriate. The project team will evaluate TSM measures for inclusion in the alignment alternatives that will be developed during Tier 2 studies.

**Build Alternative: Improve Existing Roads**

As part of Step 1, Develop and Screen Alternatives, the Lead Agencies assessed whether improvements could be made to existing roads and bridges to address the purpose and need for the project.

The Claude Allouez Bridge and WIS 172 crossings are four and six lanes wide, respectively. The WIS 172 bridge cannot be widened by making improvements to the deck alone; it would have to be completely replaced to add lanes to it (Strand Associates 2014). WisDOT recently replaced the concrete deck of the WIS 172 bridge.

Without improvements, the WIS 172 bridge over the Fox River, and WIS 172 continuing east to the County GV interchange (nearly 3 miles) will operate at level of service E in 2045. The Claude Allouez Bridge is also forecast to operate at level of service E in 2045 (Section 1, Appendix A).
Soon after the Claude Allouez Bridge was reconstructed (2008) the new roundabout on its east side became more congested and had more crashes than expected. A 2011 study of long-term options to meet expected 2031 traffic volumes if no new Fox River crossing were built concluded that a three-lane roundabout or a traffic signal would be needed in place of the two-lane roundabout there today (DLZ 2011).

To reach level of service D, improvements to the existing routes may include:

- Adding lanes to WIS 172.
- Adding lanes to Main Avenue in De Pere, removing or consolidating access points to Main Avenue in De Pere, or reducing demand through TDM.
- Expanding the roundabout on the east side of the Claude Allouez Bridge to three lanes or replacing it with a traffic signal.

Widening the WIS 172 bridge and 3 miles of its eastern approach could be comparable to the cost of an alternative route and could impact several parks (including Heritage Hill State Park, Fox River State Trail, East River Trail, Riverview Park, and Green Isle Park), all of which are adjacent to this section of WIS 172.

Expanding the roundabout on the east side of the Claude Allouez Bridge or replacing it with a traffic signal would require widening several spans of the bridge. This would mean reconstructing a bridge that was built just 12 years ago with a planned 75-year design life. When the bridge was replaced, the City of De Pere placed a high importance on keeping the existing bridge open during construction of the new bridge (as a result, the new bridge was built next to the old bridge). Reconstructing the new bridge could require closing a lane in each direction, or even closing the entire bridge for parts of what would likely be a 2-year reconstruction.

If the roundabout was expanded or a traffic signal installed, a building (containing a business) on the north side of the roundabout would need to be removed, the planned Mulva Cultural Center on the southeast side of the roundabout would be encroached on, and land would need to be acquired from Wells Park (Exhibit 2-3).

If the existing routes were improved to eliminate the need to build a new Fox River crossing, the low speed limit, numerous driveways, and pedestrian crossings that contribute to congestion in downtown De Pere would still be present (these conditions would be present if a new bridge were built, but with less traffic on the existing routes these conditions would pose less of an issue). There would also be increased conflicts between vehicles, pedestrians, and

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4 The Mulva Cultural Center is a planned 75,000 square foot arts and cultural center expected to open in 2022.
bicyclists. While each of the road improvement options can improve the level of service, they cannot completely address the following purpose and need factors:

**Address Congestion in the Vicinity of the Existing Fox River Bridges.** The Claude Allouez and WIS 172 bridges and their approaches could be improved by adding capacity (additional lanes) to address congestion and meet this need factor. However, these improvements would impact downtown De Pere if capacity were added to the Claude Allouez Bridge, and the low speed limit, numerous driveways, and pedestrian crossings that cause congestion in downtown De Pere would still be present. At the WIS 172 bridge, improvements could impact properties adjacent to WIS 172, including Heritage Hill State Park and other parks, if capacity were added to WIS 172.

**Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development.** Improving the existing routes would not address the gap in system linkages between the Claude Allouez Bridge in downtown De Pere and the WIS 96 bridge in Wrightstown (which is more than 10 miles away). Development is occurring and will continue to occur several miles south of the existing bridges, so improving the existing bridges would not address the increasing travel indirection caused by existing and future development occurring to the south. The 2045 Long-Range Transportation Plan (Green Bay MPO 2015) and Brown County Comprehensive Plan (Brown County Planning Commission 2004) note that constructing an additional bridge across the Fox River would be an effective method of handling the demand that will be generated by the development planned for the area.

**Reduce Travel Time by Improving East-West Connectivity.** The 10-mile distance between river crossings in downtown De Pere and Wrightstown leads drivers to travel several miles out of their way to cross the river. Even if congestion on the existing routes were addressed by adding capacity or other measures, the gaps in east-west system linkages will remain.

**Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges.** Adding capacity to existing routes may address congestion-related crashes. Even with additional capacity, however, motorists farther south on either side of the river traveling to a destination across the river would need to travel longer distances due to a lack of a direct route across the river. Increased vehicle miles traveled increases the exposure to crashes.

The Lead Agencies dropped the Improve Existing Roads Alternative from consideration because, even though it would result in acceptable level of service on existing Fox River crossings, it would not accommodate existing and planned land use, nor completely address the travel time need by increasing east-west connectivity.

**Build Alternatives: New Route**

In addition to the No Build, TDM, TSM, and Improvements to Existing Road alternatives, the Lead Agencies developed and analyzed new routes. Eleven different alternative routes were developed, as shown in Exhibits 2-2 and 2-4. During Step 1, the 11 alternative routes were analyzed as a collective group (Build New Route) rather than individually. The 11 alternative routes were then analyzed individually during Step 2.

**Freeway and Arterial Alternative Routes**

For each route, the Lead Agencies considered two types of roadways, a freeway and an arterial, and evaluated them relative to the project needs.

Freeways are higher-speed, limited-access roadways. I-41, I-43, and WIS 172 between I-41 and I-43 are examples of freeways. Posted speed limits are typically between 55 and 70 mph. Access to and from the freeways is provided at interchanges only. Interchanges in urban areas are typically spaced at least 1 mile apart, and in suburban areas, 2 to 3 miles apart.
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Arterials provide a connection between freeways and collector roads, and directly serve adjacent land use by providing direct access. As a result, speeds are generally lower than freeways and are typically 35 to 50 mph. The spacing of intersections along arterials can vary and is typically closer in urban areas than in rural areas. Examples of arterial roadways in the study area include County F and X.

Freeways are typically more expensive to construct than arterials. For example, freeway bridges may pass over or under crossroads and cost more to build than at-grade intersections. Freeways also typically require more land with associated increases in paved and disturbed surfaces; these tend to increase the potential for environmental impacts compared to arterials (arterials would have greater impacts than the TSM or TDM alternatives). Limited-access freeways tend to have a greater impact on adjacent land use than arterial roadways. Those parcels adjacent to a freeway but with no access to it may become less developable. Parcels adjacent to an arterial with less access control may be considered more developable. Conversely, development tends to congregate at freeway interchanges because of proximity to freeway access. Development tends to spread the length of arterials.

Constructing the South Bridge Connector as a freeway is not consistent with Brown County’s transportation plan or any of the community comprehensive plans in the study area, and does not meet the need to accommodate existing and planned land use. The public also does not support building the South Bridge Connector as a freeway. Based on the increased cost, land use impacts, and lack of local government or public support, the Lead Agencies determined that the South Bridge Connector, regardless of which route is identified as the preferred corridor, should be an arterial and not a freeway. This decision supports a Tier 1 EIS level of analysis by providing a basis for defining a corridor width to be used in evaluating impacts, as described in Section 2.3. An arterial will require a narrower corridor width than a freeway.

Therefore, at the end of Step 1, the alternatives remaining were the No Build Alternative and the Build New Route Alternative (composed of 11 arterial alternative routes)—see Exhibit 2-4.

2.2.2 Step 2: Evaluate Alternative Routes

Step 2 further assessed how well each of the 11 routes met the nine project-based screening criteria developed by Brown County in coordination with Lead Agencies (in 2007 and 2008). The project-based screening criteria were presented to the public for review and comment during the public involvement meetings in June 2008 and shared during public involvement meetings in April 2009 and May 2010 as

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5 The nine screening criteria were initially described as objectives when they were developed in 2007.
described in Section 4, Agency and Community Coordination. Step 2 considered information obtained from federal and state resource agencies as part of coordination activities. This step also provided a general assessment of notable environmental impacts that could result from each alternative. Compared to the Step 1 screening-level evaluation, the nine screening criteria further define how project needs could be met by an alternative route. The following screening criteria were established:

1. Improve the transportation system’s ability to handle travel demand generated by existing and planned development to level of service D or greater within the study area.  
2. Maintain the study area’s contiguous growth pattern and emphasize methods of addressing travel demand that complement the land uses planned for the study area.  
3. Enhance the study area’s ability to retain and attract businesses and industries.  
4. Upgrade the study area’s motorized and non-motorized transportation linkages to efficiently move the increasing number of residents, employees, visitors, and goods throughout the metropolitan area and region.  
5. Maximize mobility, multimodal accessibility, and capacity on the study area’s existing and planned transportation system.  
6. Maximize safety on the study area’s transportation system by minimizing traffic congestion and conflicts.  
7. Ensure that the project considers the land use, transportation, and other recommendations in comprehensive plans and studies that have been approved by Brown County and the communities within the study area.  
8. Minimize vehicle emissions, impacts on the Niagara Escarpment and other environmentally sensitive areas, and other negative environmental effects of traffic congestion within the study area.  
9. Efficiently link transportation systems and communities in the southern portion of the metropolitan area.

Eight of the nine screening criteria are related to one or more of the four elements of the need for the project discussed in Sections 1 and 2.2.1. Number 8 (minimize emissions and impacts to environmentally sensitive areas) is not tied to one of the need factors but was considered an important factor for assessing alternatives.

Beginning in 2008, the Lead Agencies engaged the public, tribes, and local officials in a series of meetings to develop and evaluate alternatives. Public comments and local community resolutions voiced a preference for or opposition to various alternatives. They determined that several alternative routes met some, but not all, of the project screening criteria in that they were inconsistent with land use, planning, and transportation management goals and objectives; or would result in greater social, environmental, and economic impacts (Table 2-1).

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6 This project follows WisDOT’s Facilities Development Manual (FDM), which considers level of service D acceptable in urban areas such as the Green Bay Metropolitan area. FHWA agreed that level of service D is appropriate for this project.

7 The Niagara Escarpment is the most prominent topographic and geomorphic feature in eastern Wisconsin. It is a 40- to 100-foot cliff at the edge of a large sedimentary rock layer that passes through the eastern third of Wisconsin, continues north of several of the Great Lakes into Canada, and down to Niagara Falls. The cliff formed on the bottom of ancient seas and currently provides habitat for a wide variety of rare, threatened, or endangered plant and animal species. It is an important source of groundwater recharge and at the same time is vulnerable to contaminants as a result of natural fractures in the rock and a thin layer of soil.
### Table 2-1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors and Screening Criteria (Step 2)</th>
<th>Impact on Sensitive Environmental Resources ( ^d ) (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Address Congestion in the Vicinity of the Existing Fox River Bridges</strong> (includes Screening Criteria 1 and 5)</td>
<td><strong>Reduce Travel Time by Improving East-West Connectivity</strong> (includes Screening Criteria 4 and 9)</td>
</tr>
<tr>
<td>1: Scheuring-Heritage Road</td>
<td>Yes; would improve the level of service on the Claude Allouez Bridge in 2045 from E to B.(^a) Would connect to existing County F I-41 interchange. However, additional traffic volumes on County F would require extensive capacity improvements to the I-41 interchange and adjacent intersections.</td>
<td>Yes; this Fox River crossing location is closer to existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings. Would save drivers in the Green Bay metro area a combined estimated 1,000 hours every day, or 2.0 percent travel-time savings.</td>
</tr>
<tr>
<td></td>
<td>Yes; would be consistent with existing and planned future land use. Would accommodate future travel demand generated by planned development.(^b) Would improve access to I-41 for businesses and residents east of the Fox River. Has not been supported by local governments.</td>
<td></td>
</tr>
<tr>
<td>2: Rockland-Red Maple Road</td>
<td>Yes; would improve the level of service on the Claude Allouez Bridge in 2045 from E to C.(^a) Would require a new interchange with I-41. Would require additional capacity on County F at the I-41 interchange, but not to the extent of Routes 1, 4, or the No Build Alternative.</td>
<td>Yes; this Fox River crossing location is closer to the existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings. Would save drivers in the Green Bay metro area a combined estimated 1,800 hours every day, roughly a 3.5 percent travel-time savings.</td>
</tr>
</tbody>
</table>
### Table 2.1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors and Screening Criteria (Step 2)</th>
<th>Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges (includes Screening Criteria 6)</th>
<th>Impact on Sensitive Environmental Resources d (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3: Rockland-Red Maple-WIS 172 Route</td>
<td><strong>Address Congestion in the Vicinity of the Existing Fox River Bridges</strong> (includes Screening Criteria 1 and 5)</td>
<td><strong>Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development</strong> (includes Screening Criteria 1, 2, 3, and 7)</td>
<td><strong>Potential Impacts:</strong> Agricultural lands: 43 to 86 acres Wetlands: 5 to 11 acres Water crossings: 17 Floodplain crossings: 7 Would cross the Niagara Escarpment.</td>
</tr>
<tr>
<td></td>
<td>Yes; because Route 3 has the same Fox River crossing as Route 2, it is likely that it would also improve the level of service on the Claude Allouez Bridge in 2045 from E to C. Would require additional capacity on County F at the I-41 interchange, but not to the extent of Routes 1, 4, or the No Build Alternative.</td>
<td>No; while this route is consistent with locally planned land use west of County GV (following the same route as Route 2 west of County GV), east of County GV it would travel on new alignment through an area that is mostly residential. However, would improve access to I-41 for businesses and residents along the route.</td>
<td>Yes; likely to same extent as Routes 1 and 2, since it would largely be along the same route as Route 2 and would therefore reduce congestion on existing routes similarly. Reducing congestion may reduce crash rates and improve safety.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes; this Fox River crossing location is closer to the existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes; this Fox River crossing location is closer to the existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings.</td>
<td></td>
<td>Potential Impacts: Agricultural lands: 23 to 47 acres Wetlands: less than 1 acre Water crossings: 5 Floodplain crossings: 2 Would avoid the Niagara Escarpment. Would minimize environmental impacts by following existing arterial street rights of way.</td>
</tr>
<tr>
<td>4: Rockland-Red Maple-American-Scheuring Roads Route</td>
<td>Yes; because Route 4 utilizes the same Fox River crossing location as Route 2, it is likely that it would also improve the level of service on the Claude Allouez Bridge in 2045 from E to C. Would connect to existing County F I-41 interchange. Additional traffic volumes on County F would require extensive capacity improvements to the I-41 interchange and adjacent intersections.</td>
<td>No; while this route shares portions of the Route 2 alternative (which is consistent with local land use plans), it is not the route that communities have included in their land use plans to accommodate existing and planned uses and future travel demand generated by planned development. However, would improve access to I-41 for businesses and residences along the route.</td>
<td>Yes; likely to same extent as Routes 1, 2, and 3 since it would largely be along the same route as Route 2 and would therefore reduce congestion on existing routes similarly. Combining County F traffic with South Bridge Connector traffic routed onto County F could increase crash rates on County F.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes; this Fox River crossing location is closer to the existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings. However, not as direct a route as Routes 1 or 2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes; likely to same extent as Routes 1, 2, and 3 since it would largely be along the same route as Route 2 and would therefore reduce congestion on existing routes similarly. Combining County F traffic with South Bridge Connector traffic routed onto County F could increase crash rates on County F.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2-1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors and Screening Criteria (Step 2)</th>
<th>Impact on Sensitive Environmental Resources <em>d</em> (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5: Creekview Road-Rockland-Red Maple Route</strong></td>
<td><strong>Address Congestion in the Vicinity of the Existing Fox River Bridges</strong> (includes Screening Criteria 1 and 5)</td>
<td><strong>Potential impacts:</strong> Agricultural lands: 92 to 183 acres Wetlands: 2 to 3 acres Water crossings: 18 Floodplain crossings: 5 Would cross the Niagara Escarpment</td>
</tr>
<tr>
<td></td>
<td><strong>Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development</strong> (includes Screening Criteria 1, 2, 3, and 7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Reduce Travel Time by Improving East-West Connectivity</strong> (includes Screening Criteria 4 and 9)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges</strong> (includes Screening Criteria 6)</td>
<td></td>
</tr>
<tr>
<td>Yes; because Route 5 has the same Fox River crossing as Route 2, it is likely that it would also improve the level of service on the Claude Allouez Bridge in 2045 from E to C. However, forecasted traffic volumes are lower east of County GV than west of County GV, suggesting that a new roadway is not needed east of County GV. Would require additional capacity on County F at the I-41 interchange, but not to the extent of Routes 1, 4, or the No Build Alternative.</td>
<td>No; while this route is consistent with locally planned land use west of County GV (following the same route as Route 2 west of County GV), east of County GV it would travel on new alignment through an area that is mostly developed with residential use. Would improve access to I-41 for businesses and residents along the route.</td>
<td>Yes; this Fox River crossing location is closer to the existing Fox River crossings than alternative routes farther south and provides an alternative to existing river crossings.</td>
</tr>
<tr>
<td><strong>6: I-41-Midway-WIS 172 Route</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially; this route may not divert as much traffic from the Claude Allouez Bridge as routes further north.</td>
<td>No; not consistent with local and county plans that call for most new commercial development to occur north of Midway Road; therefore, it will not accommodate future travel demand generated by planned development.</td>
<td>Less safety benefit because this route is farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances and exposure to crashes.</td>
</tr>
<tr>
<td></td>
<td>No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances.</td>
<td>Would not decrease congestion-related crashes on existing Fox River bridges to the same extent as Routes 1 through 5.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Potential impacts:</strong> Agricultural lands: 55 to 110 acres Wetlands: 5 to 9 acres Water crossings: 18 Floodplain crossings: 8 Would cross the Niagara Escarpment</td>
</tr>
</tbody>
</table>
Table 2-1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors (Step 1)</th>
<th>Accommodate Existing and Planned Land Use (Step 2)</th>
<th>Reduce Travel Time by Improving Connectivity (Step 2)</th>
<th>Address Higher-than-Average Crash Rates (Step 2)</th>
<th>Impact on Sensitive Environmental Resources (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7: Freedom-Midway-WIS 172 Route</td>
<td>Address Congestion in the Vicinity of the Existing Fox River Bridges (includes Screening Criteria 1 and 5)</td>
<td>No; not consistent with local and county plans that call for most new commercial development to occur north of Midway Road; therefore, it will not accommodate future travel demand generated by planned development.</td>
<td>No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances.</td>
<td>Less safety benefit because this route is farther away from existing and planned development and would require longer distances and exposure to crashes.</td>
<td>Potential impacts: Agricultural lands: 63 to 126 acres Wetlands: 4 to 8 acres Water crossings: 21 Floodplain crossings: 2 Would cross the Niagara Escarpment.</td>
</tr>
<tr>
<td>8: Williams Grant-WIS 57 Route</td>
<td>No; a new Fox River crossing in the vicinity of this route would carry less than 12,000 trips per day and only reduce traffic on the Claude Allouez Bridge by 7 percent.</td>
<td>No; not consistent with local and county plans that call for most new commercial development to occur north of Midway Road; therefore, will not accommodate future travel demand generated by planned development.</td>
<td>No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances.</td>
<td>Less safety benefit than Routes 1 through 5 because this route is farther away from existing and planned development and would require longer distances and exposure to crashes.</td>
<td>Potential impacts: Agricultural lands: 25 to 50 acres Wetlands: 1 to 2 acres Water crossings: 21 Floodplain crossings: 2 Would avoid the Niagara Escarpment.</td>
</tr>
</tbody>
</table>
### Table 2-1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors and Screening Criteria (Step 2)</th>
<th>Impact on Sensitive Environmental Resources (^d) (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9: Freedom-County ZZ-County MM Route</strong>&lt;br&gt;(includes Screening Criteria 1 and 5)</td>
<td><strong>Address Congestion in the Vicinity of the Existing Fox River Bridges</strong>&lt;br&gt;No; traffic projections of a new Fox River crossing (approximately 0.7 mile to the north) indicate it would only reduce traffic on the Claude Allouez Bridge by 7 percent.(^c)&lt;br&gt;A new Fox River Crossing at this location would not be as heavily used as locations further north.</td>
<td><strong>Impact on Sensitive Environmental Resources</strong>:&lt;br&gt;&lt;br&gt;- Agricultural lands: 106 to 212 acres&lt;br&gt;- Wetlands: 2 to 3 acres&lt;br&gt;- Water crossings: 20&lt;br&gt;- Floodplain crossings: 4&lt;br&gt;- Would cross the Niagara Escarpment</td>
</tr>
<tr>
<td><strong>10: Freedom-County ZZ-WIS 96 Route</strong>&lt;br&gt;(includes Screening Criteria 1, 2, 3, and 7)</td>
<td><strong>Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development</strong>&lt;br&gt;No; not consistent with local and county plans that call for most new commercial development to occur north of Midway Road; therefore, will not accommodate future travel demand generated by planned development.&lt;br&gt;A new Fox River Crossing at this location would not be as heavily used as locations further north.</td>
<td><strong>Impact on Sensitive Environmental Resources</strong>:&lt;br&gt;&lt;br&gt;- Agricultural lands: 90 to 180 acres&lt;br&gt;- Wetlands: 2 to 3 acres&lt;br&gt;- Water crossings: 14&lt;br&gt;- Floodplain crossings: 3&lt;br&gt;- Would cross the Niagara Escarpment</td>
</tr>
<tr>
<td>****</td>
<td><strong>Reduce Travel Time by Improving East-West Connectivity</strong>&lt;br&gt;No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances.</td>
<td>****</td>
</tr>
<tr>
<td>****</td>
<td><strong>Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges</strong>&lt;br&gt;No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances and exposure to crashes.&lt;br&gt;Would not decrease congestion-related crashes on existing Fox River bridges to the same extent as Routes 1 through 5.</td>
<td>****</td>
</tr>
</tbody>
</table>

\(^a\) Potential impacts: Agricultural lands: 106 to 212 acres
\(^b\) Wetlands: 2 to 3 acres
\(^c\) Water crossings: 20
\(^d\) Floodplain crossings: 4
\(^e\) Would cross the Niagara Escarpment
Table 2-1. Alternative Routes Identified in Step 1 and Evaluated in Step 2

<table>
<thead>
<tr>
<th>Route (see Exhibit 2-2)</th>
<th>Purpose and Need Factors and Screening Criteria (Step 2)</th>
<th>Impact on Sensitive Environmental Resources d (Screening Criteria 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address Congestion in the Vicinity of the Existing Fox River Bridges (includes Screening Criteria 1 and 5)</td>
<td>Address Higher-than-Average Crash Rates and Safety Issues in the Vicinity of the Existing Fox River Bridges (includes Screening Criteria 6)</td>
</tr>
</tbody>
</table>
| 11: I-41 to I-43 Route  | Accommodate Existing and Planned Land Use and Future Travel Demand Generated by Planned Development (includes Screening Criteria 1, 2, 3, and 7) | Potential impacts:  
Agricultural lands: 95 to 185 acres  
Wetlands: 2 to 5 acres  
Water crossings: 18  
Floodplain crossings: 5  
Would cross the Niagara Escarpment. |
|                         | Reduce Travel Time by Improving East-West Connectivity (includes Screening Criteria 4 and 9) | |
|                         | No; traffic projections of a new Fox River crossing (approximately 2 miles to the north) indicate it would only reduce traffic on the Claude Allouez Bridge by 7 percent.  
A new Fox River Crossing at this location would not be as heavily used as locations further north. | |
|                         | No; this is not the route that communities have included in their land use plans to accommodate existing and planned uses and future travel demand generated by planned development. | |
|                         | No; this route and Fox River crossing would be farther away from existing river crossings and planned development compared to Routes 1 through 5 and would require longer driving distances. | |
|                         | Less safety benefit than Routes 1 through 5 because this route is farther away from existing and planned development than Routes 1 through 5 and would require longer driving distances and exposure to crashes. Would not decrease congestion-related crashes on existing Fox River bridges to the same extent as Routes 1 through 5. | |

a Following further analysis, the Lead Agencies determined that no alternative would provide an acceptable level of service D or higher for the WIS 172 bridge. In order for the WIS 172 bridge to meet an acceptable level of service, a separate project would be needed. Under Corridor Alternatives 1 and 2, traffic operations along several segments of WIS 172 improve from level of service E to level of service D when compared to no-build conditions; however, one freeway segment (eastbound over the Fox River during the weekday afternoon peak hour) is anticipated to continue operating at level of service E. These alternatives would divert 4,000 to 5,000 vehicles per day (about 4%) from the WIS 172 bridge and provide moderate congestion relief.


d Environmental Resource notes:  
Wetland Data source: Wisconsin Department of Natural Resources data set provided from Brown County 2012 environmental studies.  
All 11 alternative routes were developed to the same level of detail (approximating a centerline in which to create a 150-foot corridor width) to calculate resource impacts. For floodplain and water crossings, impacts represent the actual number, rather than a range. For wetlands and agricultural resources, an impact number was calculated, then, as specified in Section 3.1, the calculated impact number was broadened and presented as an impact range. The low end of the impact ranges presented is 0.75 of the calculated impact number, and the high end of the range is 1.25 times the calculated number.

e For Alternatives 1 and 2, agricultural and wetland impacts presented in this table are different than what is presented elsewhere in this document. The corridor alignments were further refined following their selection to be retained for detailed analysis, resource data was added, and impacts were recalculated.
Routes 1 and 2 are projected to meet the level of service screening criteria. Traffic modeling conducted as part of this project (SRF Consulting Group, Inc. 2020) found that nearly all of the metropolitan planning area’s street and highway system will be able to handle the traffic projected for 2045 after the addition of major planned projects, especially if transit service continues to complement the street and highway system. These planned projects include the I-41 Brown County Expansion Project (completed in 2013), the Eastern Arterial Extension (nearly completed with the only unbuilt section northwest of the project area between WIS 29 and US 141/County R), and WIS 29 Freeway Conversion (completed).

Routes 3 through 5 share the same route as the western portion of Route 2, beginning at the intersection of County EB and F and continuing along Rockland and Red Maple Roads. From the intersection of Rockland Road and County GV, Route 3 would continue east along a new arterial and end at the WIS 172/I-43 freeway-to-freeway interchange, which would require reconstruction. Route 4 would continue north on County GV, west on County G and County MM, and end at I-43, and Route 5 would continue in a northwest direction along a new route, also ending at I-43.

Each of these routes is likely to reduce congestion on the Claude Allouez Bridge in 2045 from level of service E (with no new river crossing) to level of service B or C (same as Routes 1 and 2). However, Route 3 would require reconstruction of the WIS 172/I-43 freeway-to-freeway interchange to accommodate the new arterial, which would increase the cost of this alternative relative to others that would use existing WIS 172 and I-43 interchanges. Route 3 would also result in land use impacts and would introduce a new crossing of the Niagara Escarpment as described in Table 2-1. Route 4 would avoid the cost of building a new interchange with I-41 by using largely existing roads west of the Fox River but would likely require reconstruction of the County F interchange to add capacity. Route 5 is significantly longer than other routes (over twice the length of Routes 1 and 2), which would result in greater environmental impacts and cost. In addition, the forecasted traffic volumes are lower east of County GV than west of County GV, suggesting that a new roadway is not needed east of County GV.

Routes 6 through 11 are south of Old Martin Road, and their eastern limit is I-43, which is farther east than Routes 1 and 2. Each route was dismissed for several different reasons, but these routes have a common trait in that they are generally too far south to effectively serve existing and planned development, which is one element of the project’s purpose and need. This is demonstrated by a traffic forecast WisDOT developed in 2016 that showed that a new arterial route connecting to I-41 at County S with a new bridge crossing the Fox River at Little Rapids (Route 8) between Midway Road (Routes 6 and 7) and County ZZ (Routes 9 and 10), then using County ZZ would only carry 11,500 vehicles per day in 2045 (WisDOT 2016). County ZZ is 3 miles south of Route 2 and 4 miles south of Route 1. For reference, the Claude Allouez Bridge carried over 31,000 vehicles per day in 2015, and the WIS 172 bridge carried 84,700 vehicles per day in 2018. The three bridges over the Fox River in downtown Green Bay all carry more traffic today than a new bridge at this location would carry in 2045. Routes 9, 10 and 11 are further south than Route 8 so the findings of this forecast would apply to these routes as well.

In addition, WisDOT’s 2016 forecast showed that a new Fox River bridge at Little Rapids would only divert 3,900 vehicles per day (7 percent) from the Claude Allouez Bridge in 2045. This would provide only modest congestion relief in downtown De Pere.

None of the communities in the study area expressed support for an alternative route south of Rockland Road, based on resolutions passed in 2010, 2011, and 2016. Also, these routes did not receive strong support at public meetings in 2008, 2009, and 2010. Lastly, all of these routes would involve building a road up to 10 or 11 miles longer than Routes 1 or 2. This would increase the construction cost by tens of millions of dollars and the potential for environmental impacts compared to Routes 1 and 2.

In addition, the southern routes are not consistent with local and county plans that call for most new commercial and industrial development to occur north of Midway Road as described in Section 1.

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8 The lead agencies determined the 2018 Main and Reid corridor traffic counts were impacted by construction on Main Avenue near I-41; therefore, 2015 traffic volumes for the Claude Allouez bridge are used instead.
The Towns of Lawrence and Ledgeview both stated in 2016 resolutions that Alternative 2, which would be 2 miles north of Midway Road, is “most compatible with the planning and development decisions made over the last 20 years.”

This step ultimately eliminated nine of the routes from further evaluation: 3, 4, 5, 6, 7, 8, 9, 10, and 11. Based on considerations that arose during Step 2 evaluation, the Lead Agencies added two modified alternative routes for consideration in Step 3. Alternative Route 2 was expanded to include an alternative without a new I-41 interchange because the Lead Agencies were concerned that adding an interchange with I-41 under Alternative Route 2 could be detrimental to freeway operations. The Lead Agencies also added the Alternative Route 5/6 Hybrid to assess whether an alternative route south of Rockland Road-Southbridge Road with a new I-41 interchange could improve the metropolitan area transportation system’s ability to handle future travel demand because of its location in an area planned for development. A new I-41 interchange at this location would be approximately 2 miles from the County F and Freedom Road interchanges which would provide greater spacing between the interchanges than Alternative Route 2. Step 2 narrowed the routes retained to four (Alternative Route 1, Alternative Route 2 with and without an interchange with I-41, and Alternative Route 5/6 Hybrid). See Exhibit 2-5.

<table>
<thead>
<tr>
<th>Initial Range of Alternatives Considered</th>
<th>Alternatives Remaining after Screening Step 1</th>
<th>Corridor Alternatives Remaining after Screening Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Build</td>
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<td></td>
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<tr>
<td>Improve Existing Roads</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Scheuring-Heritage Rd</td>
<td>☑</td>
<td></td>
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<tr>
<td>Rockland-Red Maple Rd</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Rockland-Red Maple-WIS 172</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Rockland-Red Maple-American-Scheuring</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Creekview Road-Rockland-Red Maple</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>5/6 Hybrid</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>I-41-Midway-WIS 172</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Freedom-Midway-WIS 172</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Williams Grant-WIS 57</td>
<td>☑</td>
<td></td>
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<tr>
<td>Freedom-County ZZ-County MM</td>
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<tr>
<td>Freedom-County ZZ-WIS 96</td>
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<td></td>
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<tr>
<td>I-41 to I-43</td>
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<tr>
<td>Transportation System Management</td>
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<tr>
<td>Transportation Demand Management</td>
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</tr>
</tbody>
</table>

Exhibit 2-5. Alternatives Remaining after Step 2
2.2.3 Step 3: Refined Alternative Routes

Step 3 evaluated the four routes remaining at the end of Step 2 (see Exhibits 2-5 and 2-6) using criteria initially developed by Brown County between 2010 and 2012 and re-evaluated during more recent preparation of this EIS. The criteria were expanded to include implementation-related factors and consider how a new interchange on I-41 would affect freeway traffic and safety, incorporating the Southern Arterial Preliminary Engineering and Operations Review (PEOR) Traffic Analysis, which was completed in 2018 (SRF Consulting Group, Inc. 2018).

The Lead Agencies eliminated two routes at the end of Step 3 and retained two for evaluation in this Tier 1 EIS as 500-foot wide corridors. This step provided a more detailed assessment of each of the four routes based on the following measures:

- Is the route consistent with local and county plan updates, and do local governments support it?
- Does the route contribute to problems on nearby existing roads and interchanges?
- What is the extent of land acquisition needed for the route?
- Does the route minimize effects on environmentally sensitive areas?

From the December 2019 public involvement meeting and March 2020 Public Involvement Event, the Lead Agencies received over a dozen comments that an alternative that uses the existing County S interchange to connect with I-41 and crosses the Fox River at the relatively narrow location near Little Rapids should be selected. The commenters did not mention a specific route alternative, but their descriptions had features that are similar to alternatives previously considered in Step 2 (generally in the area of Alternatives 7, 8, 9, and 10). About the same number of people indicated they support Alternative 2. None of the other alternatives received as much support at the December meeting. The public involvement comments stated that the advantage of connecting to I-41 at County S and crossing the Fox River at Little Rapids was that it would save money by using an existing County S interchange and cross the Fox River at a narrower point than other alternatives. One commenter stated that fewer homes would be affected by an alternative in this area than by Alternatives 1 and 2.

It is true that a shorter Fox River bridge connecting to an existing I-41 interchange would be less expensive than building a new interchange. However, the County S interchange would likely need to be reconstructed and expanded if the South Bridge Connector connected to I-41 there, which would reduce the cost savings. These cost savings would also be at least partially offset by the need to build a longer road east of the Fox River. An alternative in that general area that would connect to I-43/WIS 172 would require 7 additional miles of roadway to be built east of the Fox River, compared to Alternatives 1 and 2 (Exhibit 2-2). Even if an alternative in this route did not extend east to I-43/WIS 172 but rather connected to County GV, it would still require an additional 4 miles of roadway to be built compared to Alternative 1 and an additional 3 miles of new roadway compared to Alternative 2. The effect on residences is within the same range as for Alternatives 1, 2, 9, and 10. Ultimately, alternative routes using the County S interchange to connect with I-41 were not considered viable because they did not meet the project purpose and need as described in Table 2-1.
Exhibit 2-6. Route Alternatives Remaining After Step 2 Screening
Alternative Route 1: Scheuring–Heritage Road

Alternative Route 1 begins at County EB (Packerland Drive) and passes through the existing I-41 interchange at the northern edge of Preserve Park. It continues along County F in the Town of Lawrence, crosses the Fox River, and continues along County X (Heritage Road). The route ends at the previously improved County GV (Monroe Road) in the Town of Ledgeview.

Alternative Route 1 would provide a river crossing 1.5 miles south of the Claude Allouez Bridge. The river crossing would improve the metropolitan area transportation system’s ability to handle existing and future travel demand as described previously. Based on the 2018 PEOR findings, the County F interchange with I-41 would need increased capacity to handle the additional traffic that would use the interchange under Alternative Route 1. It would also need additional capacity even under the No Build Alternative, though not to the extent it would under Alternative Route 1.

The County F and X portions of this route are lined with a mix of businesses, single-family residences, and multi-family residences. Alternative Route 1 would be consistent with locally planned land use and meet the identified project needs by increasing efficiency of east-west travel. However, Route 1 has not been supported by local governments.

The Alternative Route 1 would follow existing arterial street rights of way (except for the new Fox River crossing) and reduce the need for land acquisition. Use of existing rights of way would also minimize environmental impacts to wetlands, farmland, and other environmentally sensitive areas.

Alternative Route 2: Rockland Road–Red Maple Road with I-41 Interchange

Alternative Route 2 is south of Route 1. It would begin at County EB (Packerland Drive) in the Town of Lawrence and continue along a new alignment to connect to a new full-access interchange on I-41. The route would continue east on Southbridge Road and Red Maple Road, cross the Fox River, and continue along Rockland Road. At the intersection of Rockland Road and County PP (South Broadway), the route would continue northeast along a new alignment and end at the intersection of County X and the previously improved County GV (Monroe Road) in the Town of Ledgeview.

Alternative Route 2 would cross the Fox River 2.5 miles south of the Claude Allouez Bridge. As with Alternative Route 1, the Alternative Route 2 river crossing would improve the metropolitan area transportation system’s ability to handle existing and future travel demand. In 2018, the Lead Agencies completed the Southern Arterial PEOR Traffic Analysis (SRF Consulting Group, Inc. 2018) to assess how a new interchange on I-41 would affect freeway traffic and safety. The results of this review indicated that a new interchange would not disrupt freeway operations and would allow I-41 and surrounding roadways to operate efficiently (discussed below). The results of this review also indicated that the County F interchange with I-41 would need increased capacity to handle future traffic volumes under Alternative 2, but not to the extent of Alternative Route 1.

The area adjacent to Alternative Route 2 is less developed than the area adjacent to Alternative Route 1. The Rockland Road portion of the route on the east side of the river is a mix of agricultural, residential, and commercial uses. Similar land uses are on the western side of the river, although a greater percentage of the land along Red Maple and Southbridge roads is industrial compared to the Rockland Road route (Brown County Planning Commission 2010). Alternative Route 2 is consistent with planned land uses, including areas north and south of this route (Brown County Planning Commission 2004, 2010, 2016). Local governments passed resolutions in 2010, 2011, 2016, 2019, and 2020 supporting Alternative Route 2 with an interchange at I-41. Public opinion expressed during the most recent public meetings held in December 2019 and March 2020 was divided between Alternative Route 2 with an interchange and a Little Rapids bridge crossing discussed in the text box on Page 2-21.

Alternative Route 2 would largely follow existing arterial street rights of way and reduce the need for land acquisition, but it would relocate more residences than Alternative Route 1. Use of existing rights of way
would also generally minimize environmental impacts to wetlands, farmland, and other environmentally sensitive areas.

**Alternative Route 2: Rockland Road-Red Maple Road without an I-41 Interchange**

This alternative route was initially carried forward for analysis because it would provide a new Fox River crossing, improve management of existing and future traffic demand, and complement the area’s planned land use. However, without an interchange to I-41, this alternative would not perform as efficiently as the Alternative Route 2 with an interchange. This alternative would require traffic connecting to/from the South Bridge Connector and I-41 to use the County F interchange. The County F interchange would need to be reconstructed to handle the increased traffic volumes, much like it would under Alternative Route 1 (see *Address Congestion* in Section 2.4.1).

As with Alternative Route 2 with an interchange, Alternative Route 2 without an I-41 interchange is consistent with local land use plans. However, the Lead Agencies dropped Alternative Route 2 without an I-41 interchange from further consideration for the following reasons:

- The PEOR found that Alternative Route 2 without an interchange would require extensive capacity expansion to the existing County F interchange in order for both the interchange and I-41 to operate acceptably.
- Alternative Route 2 without an interchange would have similar impacts to Alternative 2 with an interchange (outside of the interchange footprint itself) but without the benefit of a direct connection to I-41. Traveling over I-41 on an overpass, connecting to County F at Packerland Drive and then back east to the County F/I-41 interchange would add two miles to each trip for drivers using the South Bridge Connector to access I-41.

**Alternative Route 5/6 Hybrid: Old Martin Road Route with I-41 Interchange**

This alternative route would begin at County F (Williams Grant Drive) and continue along a new alignment to a new full-access interchange with I-41 about 2.5 miles south of the County F interchange. It would continue east along the new alignment and cross the Fox River on a new bridge. The route would follow Old Martin Road and continue northeast along a new alignment to County X. From there, it would continue to the previously constructed County GV (Monroe Road).

The Lead Agencies developed this alternative to assess how well a new I-41 interchange and route south of the Rockland-Red Maple Road route would address the project’s purpose and need. This route was initially carried forward for additional analysis because its location in a planned development area was expected to support existing and future development and improve the metropolitan area transportation system’s ability to handle future travel demand. However, after conducting an initial environmental impact analysis and receiving public comments, the Lead Agencies removed the Route 5/6 Hybrid from further consideration because this alternative would:

- Require acquisition of more land, including farmland.
- Lack public support as expressed by feedback during public meetings in 2010 and 2019. In addition, it was opposed by the towns of Lawrence and Rockland, because it was incompatible with local plans.

Because this route was developed at the completion of Step 2, it was not included in the formal Step 2 alternative evaluation process. During the Step 3 analysis, the Lead Agencies determined that not only would it not meet the Step 3 criteria listed above, but would not meet several of the Step 2 Screening Criteria. For example, it would not attract and retain businesses (Step 2 Screening Criteria) because it
would provide little to no access to the De Pere East Industrial Park, De Pere West Business Center, Lawrence Business Park, and Ledgeview Industrial Park.

Step 3 narrowed the routes retained to two: Alternative Route 1 and Alternative Route 2 with an interchange with I-41 (see Exhibit 2-7).

### 2.3 Alternative Routes Retained for Detailed Study

Following Step 3 of the alternative identification, screening, and evaluation process, the No Build Alternative and two route alternatives shown in Exhibits 2-7 and 2-8 were retained for evaluation in the EIS. These routes are Alternative 1: the Scheuring Road-Heritage Road (County F-County X) Route and Alternative 2: Rockland Road-Red Maple Road Route with an I-41 Interchange. Each of these routes has a west project terminus at the intersection of County F and County EB in the Town of Lawrence. The east terminus is the intersection of County X and County GV in the Town of Ledgeview (after County GV was reconstructed and widened, it became a logical eastern terminus because it provided a good connection to WIS 172, which in turn has a good connection to I-43).

While the alternative routes evaluated in this Tier 1 EIS were initially conceptualized as specific roadway alignment alternatives during the project development that occurred from 2008-2019, the alternatives retained for detailed analysis in this EIS are carried forward as 500-foot wide corridors (hereafter referred to as “Corridor Alternatives” rather than “Alternative Routes”), each containing a working alignment. This section describes the corridors and the working alignments positioned within the limits of the corridors. It also provides conceptual cross-sections of the South Bridge Connector to illustrate what the road might look like.
Exhibit 2-8. Corridor Alternatives Retained for Detailed Study
2.3.1 Representative Corridor Concept

The Lead Agencies developed the following set of terms to describe the Corridor Alternatives.

**Corridor**

The corridor is the area within which the future roadway is expected to be built, as shown in Exhibit 2-9. The corridor width is greater than the corresponding working alignment width described below. For this project, the corridors are generally 500 feet wide, although they widen at locations like the I-41 interchange. The Lead Agencies determined that this width is appropriate based on the planned roadway cross-section (generally 2 lanes in each direction with turn lanes) and the area needed at intersections or interchanges. The corridor width is more than three times the width of the working alignment, which allows enough area for engineering design flexibility and potentially shifting the roadway alignment to avoid impacts during subsequent Tier 2 studies.

**Working Alignment**

The working alignment is a conceptual roadway alignment inside each Corridor Alternative, used to estimate representative physical impacts that could occur if the South Bridge Connector is constructed within a selected corridor. The working alignment is 125 to 150 feet wide based on the anticipated roadway cross-section (note that this is conceptual and subject to change based on Tier 2 analysis). In some places, the working alignment is wider (e.g., at intersections) to account for the larger footprint of the anticipated transportation facility in these locations. Tier 2 studies will further develop and evaluate specific roadway design and may compare different refined alignment alternatives within a selected 500-foot corridor. Approving a 500-foot corridor in the Tier 1 Final EIS and Record of Decision would not mean that the working alignment is approved at that time as the alternative to be constructed.
Exhibit 2-10 shows how the corridor, working alignment, and refined alignment widths are applied in a Tier 1 EIS versus a Tier 2 environmental document. At this Tier 1 phase, the corridor is used to determine the general project location and the working alignment is used to make a reasonable estimate of potential impacts that could result from Tier 2 project development. Because the environmental impact analysis relies on existing published data rather than detailed field investigations, and because corridors are being evaluated rather than specific alignments, the impact analysis in the Tier 1 EIS is limited to identifying broader, more general estimates of likely project impacts to resources. However, if and when individual projects progress to Tier 2 and specific detailed engineering alignments are developed, impacts will be determined and assessed at a more refined level.

Section 2.3.2 describes the approach used to locate the working alignment within each Corridor Alternative. During the Tier 2 phase, the project team will assess options to refine the roadway alignment within the selected corridor to balance meeting the project purpose and need with avoiding and minimizing impacts to the extent practicable. As a result, the refined alignments evaluated in Tier 2 may differ from the working alignments evaluated in this Tier 1 EIS due to the development of more detailed design and impact information.

It is expected that the existing arterial streets that each corridor follows would be widened to four travel lanes (two in each direction) on or near the existing alignment, with medians and complementary active transportation features such as sidewalks and bikeways. The number of travel lanes is based on design year (2045) traffic forecasts, but will be revisited during Tier 2 studies (SRF Consulting Group, Inc. 2018). The expected posted speed limit on Corridor Alternative 1 is 25 to 40 mph. The expected posted speed limit on Corridor Alternative 2 is 40 mph.
2.3.2 Methodology for Developing Working Alignments

To develop the specific location for the 125- to 150-foot-wide working alignments within the 500-foot-wide corridors, the Lead Agencies initially evaluated potential environmental impacts along each corridor. They identified two residential areas along Corridor Alternative 2 that could be avoided by slightly shifting the working alignment. During this Tier 1 phase, working alignments were only adjusted for these two residential areas. Tier 2 analyses will include more detailed evaluations of impacts to resources and further consideration of avoiding, minimizing, and mitigating impacts to resources.

**Corridor Alternative 1.** The working alignment for Corridor Alternative 1 generally follows County F and County X and assumes widening on both sides equally to balance effects across both sides of the roadway.

The Lead Agencies did not identify specific resources that could be avoided through minor alignment shifts; therefore, no alignment shifts were made at this time although they could occur during more detailed engineering design. The Corridor Alternative 1 working alignment was expanded at the Fox River State Trail if the Fox River State Trail is built over or under Corridor Alternative 1, and at the County F interchange with I-41 and County F and County X intersections with arterials to accommodate higher future traffic volumes.

**Corridor Alternative 2.** The working alignment for Corridor Alternative 2 generally follows Rockland Road, Red Maple Road, and Southbridge Road. For areas of new alignment along this corridor, the working alignment was located to follow roadway design criteria for an arterial roadway. For most of the working alignment, widening along existing roads is assumed to occur on both sides equally to balance effects across both sides of the roadway, except in two locations (see the following page) where the working alignment was slightly shifted to minimize impacts.

- On Rockland Road between Broadway Street and the Fox River State Trail, the working alignment was shifted slightly north (by 10 feet) in order to avoid impacts to single- and multi-family residential dwellings on the south side of the roadway (Exhibit 2-11). This slight shift would reduce impacts to about 60 residences.

Exhibit 2-11. Alternative 2. Location of Working Alignment Shift between County PP and Fox River State Trail
On Rockland Road between WIS 57/WIS 32 and Old Plank Road, the working alignment was slightly shifted to the south a few feet to avoid impacts to residential dwellings on the north side of the road (Exhibit 2-12). This shift would reduce or avoid impacts to six single-family residences on the north side of the roadway.

The Corridor Alternative 2 working alignment was also slightly expanded in several locations to account for additional land that may be needed for the new roadway, including:

- At the proposed interchange with I-41, a larger footprint was incorporated. In addition, the working alignment was slightly expanded to account for a potential collector-distributor (C-D) roadway system (described in Section 2.3.4).
- At CN rail line, to account for a wider footprint of a potential grade-separated crossing.
- At County D (Lost Dauphin Road), to account for a larger footprint at the intersection.
- At WIS 57/WIS 32 (Greenleaf Road), to account for a larger footprint at the intersection.
- At the Fox River State Trail if the trail is built over or under Corridor Alternative 2.

During future Tier 2 studies, more constraints and resources will be evaluated, and alternatives will be adjusted within the corridor width to avoid or minimize impacts to adjacent properties and natural features where practicable. In addition to refining the location of the working alignment, the proposed roadway width could potentially be narrowed in some locations if there are sensitive resources on both sides of the working alignment. The opposite is also true; there may be some areas where the working alignment could need to be widened beyond 125 or 150 feet where additional area is needed (such as areas of undulating topography).

2.3.3 Corridor Alternatives

This section describes representative cross-sections of the working alignments in Corridor Alternatives 1 and 2 to illustrate what the road might look like. In this Tier 1 EIS, the Lead Agencies included the cross-sections for illustrative purposes, to develop realistic working alignments, and to help estimate the impacts of each alternative. The Lead Agencies will make final decisions about the cross-sections and the locations of the refined alignments during Tier 2 analyses.
Corridor Alternative 1: Scheuring Road-Heritage Road (County F-County X) Arterial
Corridor Alternative 1 is approximately 5.5 miles long. From its western terminus at County EB (Packerland Drive) to west of Mid Valley Drive, the representative cross-section of the South Bridge Connector is a four-lane divided rural roadway (see Exhibits 2-8 and 2-13).

West of the Fox River, between Mid Valley Drive and Lawrence Drive, County F was reconstructed in 2011 as part of the I-41 reconstruction. Nonetheless, this portion of County F would need additional capacity improvements. County F would likely need to be widened to three lanes in each direction, which would also require widening the County F bridge over I-41. The roundabouts at the I-41 ramp terminals and at the Lawrence Drive intersection would likely need to be replaced by signalized intersections because the PEOR determined that three-lane roundabouts (compared to the two-lane roundabouts there today) would not provide enough capacity. While FHWA and the American Association of State Highway Transportation Officials (AASHTO) do not have any regulations or guidance that prohibit or discourage four-lane roundabouts, they do not have any design standards for them. Some exist in Europe, but the Lead Agencies are not aware of any four-lane roundabouts in the U.S. Therefore, it’s likely that signalized intersections, sized appropriately to accommodate expected future traffic volumes, would replace the roundabouts.

At the southbound I-41 exit ramp three left-turn lanes onto eastbound County F would be needed. At Lawrence Drive, three left-turn lanes would be needed to carry left-turning northbound traffic from Lawrence Drive to westbound County F. Certain other intersection turn movements would need double left- or double right-turn lanes.

Features such as a sidewalk or shared-use path would likely be added. Brown County and the City of De Pere would determine this in Tier 2.

West of Fox River, between Matthew Drive and the Fox River along County F, there are numerous residential and business driveways. County F today is one lane in each direction with a two-way left-turn lane to allow left turns into and out of driveways. One additional lane is expected to be added in each direction (so the roadway would be two lanes in each direction), and the two-way left-turn lane would remain. A sidewalk or shared-use path would likely be provided. Exhibit 2-14 shows a typical cross-section.
East of the Fox River to County GV (the east terminus), it follows County X, and the road would likely be widened to be a four-lane divided roadway with a median. Exhibits 2-13 and 2-15 show typical cross-sections of how the reconstructed roadway may look.

Corridor Alternative 2: Rockland Road-Red Maple Road Arterial with I-41 Interchange

Corridor Alternative 2 is approximately 6 miles long. It would be a four-lane divided roadway with a median, shared-use path or sidewalk, and ditches from its west terminus at the intersection of County F and County EB (Packerland Drive) to its east terminus at County GV (see Exhibit 2-B). Exhibit 2-13 depicts a representative cross-section of the working alignment in Corridor 2 and may change during Tier 2 based on more input from local governments. Some sections of Corridor Alternative 2 may have storm sewer installed which would eliminate the need for ditches. In addition, the County F interchange with I-41 may need to be reconstructed to accommodate additional traffic. An additional one to two travel lanes (five lanes total) would be needed on County F between Lawrence Drive and Mid Valley Drive. The bridge over I-41 was designed to accommodate additional lanes of traffic when it was built in 2011, so it would not need to be widened. An additional approach leg would be needed at Lawrence Drive and at the eastbound approach to the southbound ramp terminal intersection (even under the No Build Alternative additional capacity would likely be need at this interchange).

The Lead Agencies are considering a C-D road along I-41 between the proposed I-41 interchange and the existing County F interchange 1 mile north as an option for Alternative 2. A C-D road is a limited-access road carrying traffic from local roads and arterial roads to freeways or highways. The purpose of a C-D road is to eliminate weaving on the freeway and reduce the number of exit and entrance points on the freeway.
The Southern Arterial PEOR found that I-41 would operate at an acceptable level of service with and without a C-D road between the proposed South Bridge Connector interchange and the County F interchange.

2.3.4 Alternatives Evaluation Summary

The Lead Agencies identified and evaluated alternatives in a three-step process which began by identifying 15 alternatives: No-Build, two management alternatives (TDM and TSM), an Improve Existing Roads Alternative, and a Build New Route alternative (which included 11 alternative routes). The Lead Agencies consulted transportation plans and studies, reviewed the county’s and each community’s comprehensive plans, and received input from the public, local officials, tribes, and other government agencies to identify the initial set of construction alternatives that might achieve the project’s purpose and need. As part of the route evaluation, Improve Existing Roads, TSM, TDM, and the Build New Route freeway option were removed in Step 1.

In the second step of the evaluation process, the 11 alternative routes were assessed in terms of how each route met the needs-based screening criteria; local government, and natural resource agency input; and whether major impacts could result. The project screening criteria included transportation considerations, land use and growth management, environmental considerations, and consistency with local and regional plans. As part of this step, the Lead Agencies determined that some routes did not meet the project screening criteria; were inconsistent with land use, planning, and transportation management goals and objectives; or would result in social, environmental, and economic impacts that were too great. Also, as part of this step, two modified alternative routes were added: Alternative Route 2 without a new interchange at I-41, and a hybrid of Alternative Routes 5 and 6. Nine alternative routes were removed from further consideration in Step 2, and two were added.

During the Step 3 evaluation, the Lead Agencies considered consistency with local and county plans, local government support, effects on nearby existing roads and interchanges, land acquisition needs, and effects to environmentally sensitive areas. To assess the effect of a route on roads and interchanges, they considered how a new interchange with I-41 at Southbridge Road would affect freeway traffic operations and safety. They determined that a new interchange would allow I-41 and surrounding roadways to operate efficiently, but that additional safety analyses are needed.

At the conclusion of Step 3, the Lead Agencies selected the No Build Alternative and two alternatives for detailed study:

- No Build Alternative
- Corridor Alternative 1: Scheuring Road-Heritage Road (County F-County X) Arterial
- Corridor Alternative 2: Rockland Road-Red Maple Road Arterial with a new interchange at I-41, plus an option for a C-D system road along I-41 between the new interchange and the County F interchange

The Lead Agencies identified a working alignment within each Corridor Alternative as a basis for estimating the impacts. The existing arterials in Corridor Alternatives 1 and 2 would likely be widened to four travel lanes (two in each direction), with median and features such as sidewalks and/or bike accommodation. If the Tier 1 Final EIS/ROD selects a Corridor Alternative, future Tier 2 studies will further refine alignments and cross-sections within the selected corridor, and evaluate avoidance, minimization, and mitigation of impacts.

2.4 Identification of a Preferred Corridor Alternative

The Lead Agencies retained the No Build Alternative, Corridor Alternative 1, and Corridor Alternative 2 (with and without collector-distributor road system) for detailed study. The No Build Alternative was retained as a baseline for comparison to the Corridor Build Alternatives. It was not selected as the preferred Corridor Alternative because it would not meet the purpose and need for the project.
(decrease congestion in the vicinity of the existing Fox River bridges, accommodate existing and planned land use, reduce travel times by improving east-west connectivity, or improve safety).

The Lead Agencies have identified Corridor Alternative 2 as their preferred alternative (Exhibit 2-5). Section 2.3.4 describes Corridor Alternative 2, and Section 3 contains a detailed discussion of the transportation and environmental consequences of Corridor Alternatives 1 and 2. The Lead Agencies will identify the selected alternative in the Tier 1 Final EIS/ROD after the public and agency comment period on the Tier 1 Draft EIS. Corridor Alternative 2 includes an option for a C-D road system along I-41 between Corridor Alternative 2’s new interchange with I-41 and County F (Scheuring Road) 1 mile north. The Lead Agencies will not make a decision in the Tier 1 EIS about whether the C-D roads will be a part of Corridor Alternative 2. Whether or not to include a C-D road system will be evaluated in a Tier 2 study (potentially in the I-41 Project study mentioned in Section 1.1.2).

This section compares Corridor Alternative 2 to the No Build Alternative and Corridor Alternative 1 and describes why the Lead Agencies identified Corridor Alternative 2 as the preferred alternative.

2.4.1 Basis for Selection

Corridor Alternatives 1 and 2 both met the Steps 1, 2, and 3 screening criteria described in Section 2, Alternatives Considered. To identify the preferred Corridor Alternative, the Lead Agencies evaluated both alternatives to assess in greater detail which best met the Steps 1, 2, and 3 criteria.

Corridor Alternatives 1 and 2 are similar in that each would involve building new road corridors located only 1 mile apart. As a result, they meet many of the criteria to similar extents. This discussion focuses on those criteria that differentiate the two Corridor Alternatives, including:

- **Reduce Travel Time.** How well does the route reduce travel time by improving east-west connectivity? (Step 1)
- **Address Congestion.** How well does the route improve the transportation system’s ability to handle travel demand generated by existing and planned development at level of service D or greater within the study area? (Step 2)
- **Maximize Safety.** How well does the route maximize safety on the study area’s transportation system by reducing traffic congestion and conflicts? (Step 2)
- **Land Use Compatibility.** To what extent is the route consistent with local and county plan updates, and supported by local governments? (Step 3)
- **Socioeconomic Impacts.** What is the extent of land acquisition needed for the route? (Step 3)
- **Impacts to Natural Environment.** How well does the route minimize effects on environmentally sensitive areas? (Step 3)

**Reduce Travel Time**

Under the No Build Alternative, there would be no improvement in travel time and as congestion on existing roads increases, travel time would increase.

Both Corridor Alternatives 1 and 2 would improve travel times on the Claude Allouez Bridge by diverting some traffic to a new Fox River crossing. Under Corridor Alternative 2, this would save drivers in the Green Bay metro area a combined 1,800 hours every day, roughly a 3.5 percent travel-time savings compared to the No Build Alternative. Corridor Alternative 1 would save an estimated 1,000 hours every day, or 2.0 percent travel-time savings compared to the No Build Alternative.
In addition, both Corridor Alternatives 1 and 2 would decrease travel time for drivers who want to connect to newly developed areas to the south of the Claude Allouez Bridge in De Pere, Ledgeview, and Lawrence, where rapid growth has occurred and is planned to continue.

**Address Congestion**

Under the No Build Alternative, there would be no new bridge over the Fox River, and congestion on existing roads would increase as described in Section 1.

Corridor Alternative 1 would carry about 31,000 vehicles per day on its new bridge over the Fox River in 2045, while Corridor Alternative 2 would carry about 25,000 vehicles per day. Traffic volumes on the other sections of these two alternatives would be lower than the traffic volumes on the bridge (Exhibit 2-16). The level of service on Corridor Alternatives 1 and 2 would be A, B, or C depending on the segment (Table 2-2).

However, under Corridor Alternative 1, the County F interchange with I-41 and County F and County X intersections with arterials (including Lawrence Drive, County D, WIS 32/57, and County PP) would need to be built larger than they would under Corridor Alternative 2 in order to safely and efficiently accommodate traffic already expected on County F and County X plus traffic that would be expected to traverse the South Bridge Connector.

### Table 2-2 Corridor Alternative 1 Level of Service

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Volumes (vehicles per day)</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>County F between County EB (Packerland Drive) and I-41</td>
<td>10,700</td>
<td>21,700</td>
</tr>
<tr>
<td>County F between I-41 and Lawrence Drive</td>
<td>25,700</td>
<td>33,000</td>
</tr>
<tr>
<td>County F between Lawrence Dr and American Blvd</td>
<td>13,400</td>
<td>17,900</td>
</tr>
<tr>
<td>County F between E Matthew Dr and Suburban Dr</td>
<td>5,700</td>
<td>7,600</td>
</tr>
<tr>
<td>County F between Suburban Dr and County D</td>
<td>4,400</td>
<td>6,200</td>
</tr>
<tr>
<td>New bridge over Fox River (Corridor Alternative 1)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>County X between WIS 32/57 and County PP</td>
<td>5,500</td>
<td>6,900</td>
</tr>
<tr>
<td>County X between County PP and Jordan Rd</td>
<td>8,800</td>
<td>14,700</td>
</tr>
<tr>
<td>County X between Swan Rd and County GV</td>
<td>6,300</td>
<td>8,400</td>
</tr>
</tbody>
</table>

*a Modeling based on posted speed limit of 40 mph. If the posted speed on County F was 30 mph, then the new bridge over the Fox River would carry 25,000 vehicles per day rather than 31,000. It would still operate at level of service C.*
### Table 2-3. Corridor Alternative 2 Level of Service

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Volumes (vehicles per day)</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southbridge Rd between County F and I-41</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southbridge Rd between I-41 and Lawrence Dr</td>
<td>1,000</td>
<td>1,500</td>
</tr>
<tr>
<td>Southbridge Rd between Lawrence Dr and American Blvd</td>
<td>1,300</td>
<td>1,800</td>
</tr>
<tr>
<td>Red Maple Rd between American Dr and County D</td>
<td>1,500</td>
<td>2,000</td>
</tr>
<tr>
<td>New bridge over Fox River (Corridor Alternative 2)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rockland Rd between WIS 32/57 and County PP</td>
<td>650</td>
<td>870</td>
</tr>
<tr>
<td>Rockland Rd between County PP and County X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*a Modeling based on posted speed limit of 40 mph.*
SECTION 2—ALTERNATIVES CONSIDERED

Exhibit 2-16. Corridor Alternatives with Traffic Volumes at Select Locations

Traffic volumes are average daily traffic expressed in vehicles per day in 2045.

Source: Brown County 2019
Claude Allouez Bridge and WIS 172 Bridges. The Lead Agencies also assessed how the No Build Alternative and Corridor Alternatives 1 and 2 would affect other roadways in the area like the Claude Allouez Bridge and WIS 172 bridge.

The Claude Allouez Bridge would operate at level of service E under the No Build Alternative. There would be little difference in how these roads operate between Corridor Alternatives 1 and 2. Corridor Alternative 1 would divert a little more traffic from the Claude Allouez Bridge than would Corridor Alternative 2. Under Corridor Alternative 1, the Claude Allouez Bridge would operate at level of service B in the peak hour in 2045, and under Corridor Alternative 2, it would operate at level of service C in the peak hour in 2045. Corridor Alternative 1 would divert more traffic from the Claude Allouez Bridge because it is closer to it than Corridor Alternative 2. Diversion of traffic from the Claude Allouez Bridge is one factor in the overall alternatives screening process.

The WIS 172 bridge would operate at level of service E under the No Build Alternative. Corridor Alternatives 1 and 2 would provide modest congestion relief by diverting some traffic from the bridge and adjacent segments. Corridor Alternative 1 would divert 5,000 vehicles per day from the WIS 172 bridge, while Corridor Alternative 2 would divert 4,000 vehicles per day compared to the No Build Alternative. Corridor Alternatives 1 and 2 would improve level of service to D (compared to E under the No Build Alternative) in the morning peak hour, but eastbound WIS 172 would still operate at level of service E during the afternoon peak hour.

Main Avenue. Segments of Main Avenue would operate at level of service C or D under the No Build Alternative. Main Avenue would operate at level of service C or better in 2045 under Corridor Alternatives 1 and 2, except the Main Avenue/Broadway Street roundabout on the east side of the Claude Allouez Bridge. This roundabout would operate at level of service F in either the morning or evening peak hours, or both, under all three alternatives (delay will be much higher under the No Build Alternative, even though all three alternatives would be classified as level of service F).

I-41. I-41 would operate at level of service C or better under Corridor Alternatives 1 and 2, as well as the No Build Alternative.

I-41 Interchange. Under the No Build Alternative, the County F intersections with I-41 on- and off-ramps would operate at level of service F in the 2045 design year. The intersection with Lawrence Drive would operate at level of service F in the evening rush hour.

Under Corridor Alternative 1, the County F (Scheuring Road) interchange with I-41 would require an extensive reconstruction (described in Section 2.3.3) to add more capacity to efficiently carry traffic that already uses County F plus additional traffic from the South Bridge Connector. County F between Lawrence Drive and the I-41 interchange, and potentially the County F/Mid Valley Drive intersection west of I-41, would need to be expanded to handle the traffic volumes projected for County F plus the South Bridge Connector traffic volumes (if Corridor Alternative 1 was the selected alternative). County F traffic volumes are forecast to increase from 13,000 vehicles per day today to 23,000 vehicles per day in 2045 under Corridor Alternative 1 (a 77 percent increase).

As noted in Section 2.3.3, the existing roundabouts would likely need to be replaced by signalized intersections. Switching from roundabouts to traffic signals would likely increase delay and decrease safety at these intersections. Roundabouts generally have less delay than a signalized intersection, so converting to signals would increase delay at the County F intersections with the I-41 ramp terminals and Lawrence Drive. A study found that delay decreased 13 to 20 percent when converting to roundabouts (WisDOT 2020). Also, roundabouts are safer than signalized intersections, so converting to

9 The County F intersection may be able to remain as a roundabout because it is 0.25-mile from the County F intersection with the I-41 southbound ramp terminal (Lawrence Drive is only 850 feet from the County F intersection with the I-41 northbound ramp terminal), and County F carries less traffic west of I-41 (10,700 vehicles per day west of I-41 compared to 25,700 vehicles per day east of I-41 in 2018).
signals could increase crashes at the County F intersections with the I-41 terminals and Lawrence Drive. A 2015 study by the University of Wisconsin - Madison found that roundabouts decrease fatal and severe injury crashes by 40 percent (WisDOT 2020).

Reconstructing County F under Corridor Alternative 1 could impact 0.2 to 0.3 acres of Preserve Park, a wetland (W-05) and the parking lots for a bank and a convenience store at the County F/Lawrence Drive intersection. One or two stormwater ponds and some business signs could also be impacted.

Because Corridor Alternative 2 would have its own new interchange with I-41 about 1 mile south of County F, the County F intersections with the I-41 ramp terminals and with Lawrence Drive would operate at level of service A, B, or C because County F would not carry as much traffic (15,000 vehicles per day compared to 23,000 vehicles per day). As noted in Section 2.3.3, the capacity of the County F interchange with I-41 would need to be increased, but not to the extent it would under Alternative 1. The roundabouts would remain in place with an extra approach lane added at a couple intersections, and an additional lane or lanes would likely need to be added to County F between Lawrence Drive and Mid Valley Drive (west of I-41). It is expected this additional capacity could be added within the existing right of way, with no new property acquisition.

Maximize Safety

Under the No Build Alternative, there would be no improvement to safety as congestion on existing roads would increase.

Corridor Alternative 2 would likely be a little safer than Corridor Alternative 1 because it would be less congested due to carrying fewer vehicles. However, Corridor Alternative 1 would divert more traffic from the Claude Allouez Bridge, which would likely decrease congestion-related crashes on that bridge.

Congestion at the study intersections along Corridor Alternative 1 will become worse than under Corridor Alternative 2, increasing crash probabilities as motorists become increasingly frustrated with traffic congestion and take greater risks to continue their travel.

Corridor Alternative 1 (County F) east of I-41 transitions from industrial land uses to residential neighborhoods. With an increase in traffic anticipated along this roadway segment, coupled with numerous private driveways, the high amount of conflict points along this stretch of roadway would increase crash probabilities.

The number of access points on a roadway affects the crash rate. Corridor Alternative 1 would have 137 access points over 5 miles (116 driveways and 21 cross streets), which is an average of 27 per mile. The 1-mile segment of County F between Mathew Drive/9th Street and County D has 58 driveways, mostly residences, a school, and a church. Corridor Alternative 2 would have 29 access points (16 driveways and 13 cross streets) over 6 miles as currently developed, or an average of 5 per mile.10 The number of access points could increase along Corridor Alternative 2 but would likely remain well under the number of access points currently along Corridor Alternative 1. If Corridor Alternative 1 was selected as the preferred alternative, due to the large number of driveways, there would be limited opportunity to consolidate access points.

Corridor Alternative 2 would substantially reduce congestion at the study intersections, likely improving traffic safety when compared to the No Build Alternative and Corridor Alternative 1. In addition, fewer access points on Corridor Alternative 2 would likely result in a lower crash rate than Corridor Alternative 1 based on the research summarized in Exhibit 2-17 and similar research on how more access points on a road lead to more crashes on that road.

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10 While new driveways or cross streets could be added to the Corridor Alternative 2 route, Brown County’s access-control guidelines call for driveways being at least 225 feet from intersections and new cross-streets to be 1,000 feet from current intersections (1,200 feet from state highways).
Since much of Corridor Alternative 2 would be on new alignment, it could be designed for maximum safety instead of needing to retrofit safety measures into an already built-up corridor, as is the case for Corridor Alternative 1.
Land Use Compatibility
The No Build Alternative is not consistent with local and county plans and did not receive support from local governments or the public.

**Consistency with Local Plan and County Updates.** Brown County’s 2020 Land Use and Transportation Plan (adopted in 1996) recommended a new Fox River crossing along the Southbridge Road/Red Maple Road/Rockland Road corridor, which is Corridor Alternative 2 for this project. The communities in the study area developed their comprehensive and future land use plans assuming that corridor location for the South Bridge Connector, and have made land use and infrastructure decisions and approved developments along and near the corridor with that recommendation in mind. The City of De Pere and the Towns of Ledgeview, Lawrence, and Rockland comprehensive plans all specifically reference the South Bridge Connector (Table 2-4). The City of De Pere’s plan specifically identifies Corridor Alternative 2. By acknowledging the proposed bridge crossing in their land use plans, study area municipalities expect the proposed action to support and facilitate this development and are planning accordingly.

While not in the specific location identified in various endorsed land use plans, Corridor Alternative 1 would meet the key elements of the plans: a new Fox River crossing and connection to I-41 in an area that has experienced residential and business development and is expected to continue to grow and develop. Corridor Alternative 2 is more compatible with land use plans because it supports the historic and future land use development patterns that the County and communities have planned.

<table>
<thead>
<tr>
<th>Table 2-4. Community Resolutions and Letters of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
</tr>
<tr>
<td>Ashwaubenon</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Bellevue</td>
</tr>
<tr>
<td>De Pere</td>
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<td></td>
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<td></td>
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<tr>
<td>Hobart</td>
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<tr>
<td>Lawrence</td>
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<tr>
<td>Ledgeview</td>
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<tr>
<td></td>
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<tr>
<td>Oneida Nation</td>
</tr>
<tr>
<td>Rockland</td>
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<td></td>
</tr>
</tbody>
</table>

**Public Input.** From 2007 through March 2020, the project’s community involvement program featured 5 public involvement meetings and 37 meetings with local officials, organizations and interested groups. At the most recent public involvement meeting in December 2019 and online public involvement event in March 2020, most public comments supported Corridor Alternative 2 and a corridor that connected to the County S interchange and crossed the Fox River at Little Rapids (parts of Alternatives 7, 8, 9, and 10). The strong public support for Corridor Alternative 2 mirrors input received at the public involvement meetings held in 2009 and 2010. The Corridor Alternative that connects to I-41 at County S
and crosses the Fox River at Little Rapids was eliminated from further consideration in Step 2 (see Section 2.2.2).

The public has expressed greater support for Corridor Alternative 2 and has not supported Corridor Alternative 1 to the same extent.

**Local Government Input.** Every community in the study area has expressed official support for Corridor Alternative 2. Resolutions of support for Corridor Alternative 2 were passed in 2009, 2016, 2019, and 2020 (Appendix F, Local Officials Correspondence).

The City of De Pere, in which much of Corridor Alternative 1 would lie, expressed concern over speeds on County F, given the number of residences with driveways on the road and Syble Hopp School, if Corridor Alternative 1 were selected (see Section 4 and Appendix F). De Pere stated that a 40-mph speed limit would raise safety concerns on County F, particularly east of American Boulevard. A 25- to 30-mph speed limit, which would be more compatible with a road like County F between American Boulevard and County D, would not be as efficient for reducing travel time.

**Socioeconomic Impacts**

Under the No Build Alternative, no right of way would be acquired, and there would be no relocations. In addition, there would be no impacts to agricultural land, cultural resources, parks, or community resources. However, as congestion increases on existing roads, traffic noise may increase for sensitive noise receptors.

**Right of Way Acquisition and Relocations.** Actual right of way acquisition will not be quantified until Tier 2 studies determine the specific alignment. However, because Corridor Alternative 1 follows existing roads and part of Corridor Alternative 2 is on new alignment, it is likely that Corridor Alternative 2 would require more land acquisition than Corridor Alternative 1. Also, Corridor Alternative 2 would likely require relocation of more residences than Corridor Alternative 1 (4 to 8 residences under Corridor Alternative 1 working alignment compared to 10 to 16 under Corridor Alternative 2 working alignment). However, Corridor Alternative 1 would likely require more portions (in the terms of strip right of way takings) of residential property than Corridor Alternative 2. Corridor Alternative 1 could require partial property acquisitions from 45 to 75 residences, while Corridor Alternative 2 could require partial property acquisitions from 16 to 25 residences. The change in these properties, combined with the high density of development, number of access points, and impacts to parking and other features, has the potential to change the character of the neighborhoods adjacent to Corridor Alternative 1.

**Agricultural Land.** Corridor Alternative 1 could result in acquisition of 13 to 23 acres of agricultural land. Corridor Alternative 2 could require acquisition of 47 to 78 acres of agricultural land mostly in the vicinity of its new interchange with I-41 and the new connection to the County F/County EB intersection. This area is planned for mixed use development, so even if Corridor Alternative 2 is not built it would likely not remain in agricultural use. Corridor Alternative 2 could fragment remaining agricultural lands.

**Cultural Resources.** Corridor Alternative 1 may affect up to two archaeological sites. Corridor Alternative 2 may affect up to five archaeological sites and one potential historic architectural property (a farmstead).

**Parks and Community Resources.** Corridor Alternative 1 could impact 0.2 to 0.3 acre of the northern edge of Preserve Park. Corridor Alternative 2 could impact approximately 0.7 to 1.1 acres at the south end of Preserve Park and approximately 0.2 to 0.4 acre from the north edge of Kiwanis Park. No recreational features are located where Corridor Alternative 2 could impact park property.

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11 Section 3.1 describes how and why impacts are presented as a range rather than a specific number.
The C-D road option associated with Corridor Alternative 2 may require an additional 4 to 8 acres from the west side of Preserve Park. While the area needed to implement the C-D road nears the trail that runs through the park, it is not anticipated to be directly impacted. However, trail users may experience increased noise and visual impacts in terms of altered view of the roadway from within the park.

There are two schools and three churches adjacent to Corridor Alternative 1, compared to no schools and one church adjacent to Corridor Alternative 2. The City of De Pere has expressed concerns about the increase in traffic adjacent to Syble Hopp School, a school for children with disabilities, if Corridor Alternative 1 is selected. Traffic volumes on this segment of County F are forecast to increase from 6,000 under the No Build Alternative to 17,000 under Corridor Alternative 1 in year 2045.

**Traffic Noise.** There are approximately 300 noise-sensitive receptors adjacent to Corridor Alternative 1. There are approximately 250 noise-sensitive receptors adjacent to Corridor Alternative 2. Most noise-sensitive receptors are in residential subdivisions. In addition, Corridor Alternative 2 would have fewer driveways connected to it, which would make it more feasible to mitigate noise impacts if impacts were to occur.

**Environmental Justice.** Neither Corridor Alternative 1 nor Corridor Alternative 2 is expected to have a disproportionately high or adverse effect on low-income or minority populations.

Table 2-5 summarizes the socioeconomic impacts of the working alignments of Corridor Alternatives 1 and 2. These impacts are Tier 1 estimates and will be refined during Tier 2 studies.

**Table 2-5. Socioeconomic Impact Summary**

<table>
<thead>
<tr>
<th>Corridor Alternative</th>
<th>Residential Impacts (Relocations / property acquisition)</th>
<th>Agricultural Land (acres)</th>
<th>Cultural Resources (archaeological / historic)</th>
<th>Parks (number/acres)</th>
<th>Sensitive Noise Receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4-8 / 45-75</td>
<td>13-23</td>
<td>2/0</td>
<td>1 / 0.2-0.3</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>10-16 / 16-25</td>
<td>47-78</td>
<td>5/1</td>
<td>Without C-D road system: 2 / 0.9-1.5 With C-D road system: 2 / 4.9-9.5</td>
<td>250</td>
</tr>
</tbody>
</table>

**Indirect and Cumulative Impacts.** The indirect impacts of Corridor Alternatives 1 and 2 are likely to be similar. In consideration of stakeholder input and strong regional and local land use policies and regulation, the project team concluded that while Corridor Alternatives 1 and 2 may influence the attractiveness of land for development in the study area, the proposed project would not substantially change the location, magnitude, or pace of future development within the study area. Development is occurring in the study area without the South Bridge Connector and is planned to continue. Corridor Alternatives 1 and 2 could contribute to a more efficient transportation system in the general study area but are not driving planned development in the area. Therefore, it is anticipated that there could be minimal impacts to air, water, natural systems and cultural resources from project-influenced development resulting from the construction of the South Bridge Connector.

In addition to direct impacts, agricultural lands may be indirectly impacted as a result of the project. Consequences of the potential indirect impacts to agriculture may include creating remnant sections of agricultural lands that are either impractical or uneconomical to farm. Additionally, decreases in available land for agricultural waste management (specifically, the spreading of manure) has several implications. It increases conflicts with rural land operations and creates the potential for increased runoff into surface water and groundwater resources if proper spreading and nutrient management techniques are not able to be followed.
Resources that may experience notable cumulative impacts are agricultural land and water resources. Population and employment growth will contribute to the continued decline in the amount of land in agricultural production in the study area. This growth is driven by the area’s proximity to both the Appleton and Green Bay job markets and its attractive quality of life. The proposed action’s contribution to this decline is anticipated to be minimal. Although some developers are holding onto land waiting for a decision on the project, the land is anticipated to be developed regardless of the alternative chosen, possibly with a changed mix of land use. Overall, the growth that is leading to a decline in agricultural land in the study area is driven by factors other than the proposed action.

Current and future land development within the East River and Apple and Ashwaubenon Creek watersheds could cumulatively impact water quality despite any improvements that could result from the South Bridge Connector. Increased impervious area in the study area could increase the likelihood of stormwater carrying sediment and other nonpoint source pollutants to the Fox River and lower Bay of Green Bay.

Stormwater detention facilities, hydraulic features and other best management practices are anticipated to offset any increase in flows due to the addition of impermeable cover which could provide some water quality benefits and reduce erosion and sedimentation. After mitigation, the increase in impervious area from the Corridor Alternatives is anticipated to have a small contribution, when compared to total impervious area for the East River and Apple and Ashwaubenon Creek watershed.

**Natural Environment Impacts**

There would be no impacts to surface waters, wetlands, floodplains, stormwater, or protected species under the No Build Alternative.

**Surface Water.** Corridor Alternative 1 would cross fewer streams than Corridor Alternative 2. Corridor Alternative 1 would cross six waterways, five of which are already crossed by an existing roadway. Corridor Alternative 2 would cross eight waterways, six of which would be at locations where there is not an existing roadway crossing. Both alternatives would introduce a new bridge across the Fox River and would require piers in the river because it is too wide at the crossing to clear-span. Both alternatives would cross the East River on a new bridge.

Corridor Alternative 2 with the C-D road system option would require a longer culvert to pass Hemlock Creek under I-41 and a wider bridge to pass Ashwaubenon Creek under I-41.

**Wetland Impacts.** Corridor Alternative 1 would impact fewer wetlands and have less wetland acreage impact than Corridor Alternative 2. Corridor Alternative 1 could impact 18 wetlands, while Corridor Alternative 2 could impact 24 wetlands. Corridor Alternative 1 could impact 5 to 8 acres of wetlands, whereas Corridor Alternative 2 could impact 12 to 20 acres. Corridor Alternative 2 with the C-D road system option could impact less than one acre of additional wetland.

**Floodplain Impacts.** Corridor Alternative 1 would require four floodplain crossings (Ashwaubenon Creek, Fox River, unnamed stream [5019110], and East River), and Corridor Alternative 2 would require three floodplain crossings (Ashwaubenon Creek, Fox River, and East River). The C-D road option for Corridor Alternative 2 would require floodplain crossings at two additional locations (Hemlock Creek and a second crossing of Ashwaubenon Creek). Corridor Alternative 2 with the C-D road system option would require more floodplain crossings than Corridor Alternative 1.

**Stormwater Impacts.** Both Corridor Alternatives would increase the impervious area and therefore the amount of stormwater runoff from roadways in the study area. Corridor Alternative 2 would create more impervious area than Corridor Alternative 1 because part of Corridor Alternative 2 would be built on new alignment. This impact could be mitigated under both Corridor Alternatives by improved stormwater management practices that would remove some of the pollutants that run off roadways when it rains.
**Protected Species Impacts.** For both Corridor Alternatives, one federally listed species, the northern long-eared bat, may potentially be affected. In addition, two state-listed threatened species may potentially be affected (wood turtle and snow trillium), and one state-listed special concern species (lake sturgeon) may be affected during construction.

Table 2-6 summarizes the potential natural environment impacts of Corridor Alternatives 1 and 2. These impacts are Tier 1 estimates and will be refined during Tier 2 studies.

<table>
<thead>
<tr>
<th>Corridor Alternative</th>
<th>Total Stream Crossings (Existing/New)</th>
<th>Wetland Impacts (number/ acres)</th>
<th>Floodplain Crossings</th>
<th>Protected Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 (5/1)</td>
<td>18 / 5-8</td>
<td>4</td>
<td>One federally listed species, the northern long-eared bat, may be affected. Two state-listed threatened species (wood turtle, snow trillium) may be affected. One state-listed special concern species (lake sturgeon) may be affected during construction.</td>
</tr>
<tr>
<td>2</td>
<td>Without C-D road system: 8 (3/5)</td>
<td>Without C-D road system: 24 / 12-20</td>
<td>Without C-D road system: 3 With C-D road system: 25/13-21</td>
<td>One federally listed species, the northern long-eared bat, may be affected. Two state-listed threatened species (wood turtle, snow trillium) may be affected. One state-listed special concern species (lake sturgeon) may be affected during construction.</td>
</tr>
</tbody>
</table>

2.4.2 Preferred Alternative Summary

The Lead Agencies identified Corridor Alternative 2 as their preferred for several reasons:

- **Travel Time.** Corridor Alternative 2 would result in fewer vehicle hours of travel than Corridor Alternative 1. This indicates that Alternative 2 provides a more direct connection between origins and destinations for travelers.

- **Congestion.** Congestion relief for both alternatives is similar. Although Corridor Alternative 1 would divert more traffic from the Claude Allouez Bridge, the bridge would operate at an acceptable level of service under both alternatives. Corridor Alternative 1 would increase congestion at the County F interchange with I-41, requiring it to be modified or reconstructed. The new I-41 interchange as part of Corridor Alternative 2 would reduce the additional capacity needed at the County F interchange with I-41 compared to Corridor Alternative 1, however, some improvements would be required.

- **Safety.** Due to the amount of development adjacent to it and the form of access control used, Corridor Alternative 1 has nearly 5 times more access points than Corridor Alternative 2 with little opportunity to consolidate driveways or side streets, which would make Corridor Alternative 1 a less safe corridor. With fewer access points and the ability to implement stronger access control, Corridor Alternative 2 has the ability to provide safer travel.

- **Land Use Compatibility.** Corridor Alternative 2 is more compatible with existing and planned land use. De Pere, Lawrence, Ledgeview, Rockland, Ashwaubenon, Bellevue, and Hobart all support Corridor Alternative 2, and public support for Corridor Alternative 2 is stronger than support for
Corridor Alternative 1. The land uses and development adjacent to Alternative 1 require multiple access points that slow the movement of traffic and sensitive land uses that are inconsistent with an arterial carrying longer and higher-speed trips. These land uses would require that the posted speed be lower on Corridor Alternative 1, thus not serving the need as well. Corridor Alternative 2 allows communities to implement stricter access control, post the route at a speed limit appropriate for carrying longer trips, and continue to plan for adjacent development that is consistent with the type of roadway needed to address the purpose and need.

- **Socioeconomic Impacts.** Due to its greater length, Corridor Alternative 2 could require more right of way (mostly agricultural land) than Alternative 1. While Corridor Alternative 2 has the potential for more residential displacements, Corridor Alternative 1 could impact substantially more property owners in a denser area. The density of development, number of access points, and impacts to parking and other features of these properties has the potential to change the character of the neighborhoods adjacent to Corridor Alternative 1. Due to the lesser development and prevalence of agricultural land uses, Corridor Alternative 2 could introduce less disruption to surrounding land uses.

- **Natural Environment Impacts.** Corridor Alternative 2 has the potential to have greater impacts to wetlands and stream crossings than Corridor Alternative 1. Additionally, as Tier 1 considers a broad corridor for the purposes of comparing a wide range of alternatives, there exists the potential to avoid and minimize impacts within the corridor. With the less dense development present in Corridor Alternative 2, the avoidance and minimization potential is greater than it is in the more developed area of Corridor Alternative 1.

Corridor Alternative 2 is the Lead Agencies’ preferred alternative because it would provide the best solution for addressing long-term mobility needs and safety concerns while most effectively serving existing and planned development and balancing impacts to socioeconomic and environmental resources. It provides a similar level of relief to the Claude Allouez Bridge, requires fewer vehicle hours of travel (provides more direct travel), provides better safety performance, would create less disruption to neighborhoods, and is more consistent with surrounding land uses. The new interchange with I-41 would also require less-intensive improvements at the I-41/County F interchange. Further, Corridor Alternative 2 is more strongly favored by the public and has been endorsed by all of the adjacent communities because it provides a river crossing in an area aligned with the future growth patterns of the communities.

**Tier 2 Schedule**

The Tier 2 process is anticipated to occur in several sections beginning in 2021. Table 2-7 lists the sections and proposed timeline for the Tier 2 environmental documents and anticipated construction.

<table>
<thead>
<tr>
<th>Section</th>
<th>Tier 2 Environmental Documents</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>County EB/F to Lawrence Drive (including I-41 Interchange)</td>
<td>2020-2021</td>
<td>2026-2028</td>
</tr>
<tr>
<td>Lawrence Drive to County D</td>
<td>2022-2023</td>
<td>2029</td>
</tr>
<tr>
<td>County D to WIS 57 (including Fox River Bridge)</td>
<td>2023-2025</td>
<td>2030-2031</td>
</tr>
<tr>
<td>WIS 57 to County PP</td>
<td>2026-2027</td>
<td>2031</td>
</tr>
<tr>
<td>County PP to County GV/X</td>
<td>2027-2028</td>
<td>2032</td>
</tr>
</tbody>
</table>
2.5 References


http://www.public.applications.co.brown.wi.us/Plan/PlanningFolder/Transportation/LRTP%20Update/2045%20LRTP.Final%20011015.pdf.

Runge, Cole, Principal Planner/MPO Director, Brown County Planning Commission/Green Bay MPO. 2019a. Personal communication (phone call) with Kelly Rehberg and Valerie Ross, Jacobs. December 16.

Runge, Cole, Principal Planner/MPO Director, Brown County Planning Commission/Green Bay MPO. 2019b. Personal communication (email) with Valerie Ross, Jacobs. February 19.


Wisconsin Department of Transportation (WisDOT). 2020. *Frequently asked questions (FAQ).* 